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THE PORTS OF WILMINGTON AND MOREHEAD CITY, NC

Port Series No. 12

Revised 1980



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PORT SERIES NO. 12
REVISED 1980

THE PORTS OF WILMINGTON AND MOREHEAD CITY, NC



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THE PORTS OF WILMINGTON AND MOREHEAD CITY, NC

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*Under revision.

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I N T R O D U C T I O N

This report on the Ports of Wilmington and Morehead City, North Carolina, is published as No. 12 of the Port Series. It supersedes a similar report revised in 1971.

The reports in the Port Series cover the principal United States coastal and Great Lakes ports, and are compiled and published by the Port Facilities Branch, Water Resources Support Center, Corps of Engineers, U.S. Army, Kingman Building, Fort Belvoir, Virginia 22060, under authority of Section 7 of the River and Harbor Act of July 19, 1918, Section 500 of the Transportation Act of February 28, 1920, and Section 8 of the Merchant Marine Act of June 5, 1920.

Acknowledgment is made of the valuable assistance given by the District Engineer, U.S. Army Engineer District, Wilmington, North Carolina; facility operators; port organizations; shipping and transportation companies; state and city officials; and other individuals in the compilation of data for this report.

Unless otherwise stated, the information contained in this report was current upon completion of field survey in May, 1980.

METRIC CONVERSION TABLE

Section 3 of Public Law 94-163, the Metric Conversion Act of 1975, declares that the policy of the United States shall be to coordinate and plan the increasing use of the metric system in the United States.

As an initial step, in accordance with the Metric Conversion Act of 1975, this Metric Conversion Table is included in this Port Series Report.

<u>MULTIPLY</u>	<u>BY</u>	<u>TO OBTAIN</u>
Inches	2.54001	Centimeters
Feet	0.304801	Meters
Miles, statute	1.60935	Kilometers
Square feet	0.0929034	Square meters
Acres	0.404687	Hectares
Pounds per square foot	4.88241	Kilograms per square meter
Tons, short	0.907185	Metric tons
Tons, long	1.01605	Metric tons
Gallons	3.78543	Liters
Degrees, Fahrenheit	5/9 (F-32)	Degrees, Celsius
Barrels, oil	1.58988	Hectoliters
Bushels	0.0352391	Cubic meters

THE PORT OF WILMINGTON, NC

P O R T A N D H A R B O R C O N D I T I O N S

LOCATION AND GENERAL DESCRIPTION

The Port of Wilmington, NC, is in the southeastern part of the state, 151 nautical miles northeast of Charleston, SC, and 154 nautical miles southwest of Morehead City, NC. The port's principal waterfront facilities are along the city's waterfront on the east banks of the Cape Fear and Northeast Cape Fear Rivers; the junction of the two rivers is at Wilmington, about 28 statute miles above the mouth of the Cape Fear River.

The mouth of the Cape Fear River is about five miles west of Cape Fear, between Smiths Island on the east and Oak Island on the west. The deepwater approach from the Atlantic Ocean to the port is via a dredged channel across the bar and upstream to Wilmington. Upstream from the junction of the rivers, the Cape Fear River curves in a northwesterly direction about 115 miles to Fayetteville, NC; and the Northeast Cape Fear River extends in an almost due north direction for 103 miles to Kornegays Bridge.

The Brunswick River branches off the Cape Fear River at Navassa' about four miles above the city, flows southeasterly for approximately five miles, and rejoins the parent stream below Wilmington. Smiths Creek enters the Northeast Cape Fear River from the east at the northern boundary of the city.

The lower reaches of the Cape Fear River form a part of the route of the Atlantic Intracoastal Waterway. The section of the waterway extending southwestward from Beaufort, NC, enters the Cape Fear River through Snows Cut near Mile 14 and joins the main ship channel near Mile 12. From the river entrance of Snows Cut, a channel 12 feet deep and 100 feet wide extends northwestward to the main ship channel near Mile 16. Three miles above the mouth of the river, at Southport, the waterway leaves the main ship channel on its southerly route to Georgetown, SC, on Winyah Bay.

HARBOR AND CHANNEL IMPROVEMENTS BY THE UNITED STATES

Wilmington Harbor

The existing project, authorized by the River and Harbor Acts of July 3, 1930, March 2, 1945, May 17, 1950, October 23, 1962, and March 10, 1964 under Section 107 of the River and Harbor Act of 1960, provides for:

A channel 40 feet deep and 500 feet wide from the Atlantic Ocean through the ocean bar and entrance channels to Southport; thence 38 feet deep and 400 feet wide to upper end of anchorage basin (foot of Castle Street) at Wilmington; thence 32 feet deep and 400 feet wide to Hilton Bridge over Northeast Cape Fear River, with increased widths at bends; an anchorage basin at Wilmington, 38 feet deep, 2,000 feet long, and 900 feet wide at the upper end, 1,100 feet wide at the lower end, with approaches 1,500 feet long at the upper end and 4,500 feet long at the lower end, with some widening of the transition channel at the downstream end; a turning basin opposite the principal terminals at Wilmington, 32 feet deep, 1,000 feet long, and 800 feet wide with suitable approaches at each end; a channel 12 feet deep and 100 feet wide extending northwestward from the Atlantic Intracoastal Waterway at Snows Cut to the main river channel; and a channel 25 feet deep and 200 feet wide from Hilton Bridge to a point 1.66 miles above, including a turning basin, 25 feet deep, 700 feet wide, and 500 feet long, at a point 1.25 miles above the bridge.

The channel controlling depths and project dimensions are given in the table on page 7.

Cape Fear River above Wilmington

The existing project, authorized by the River and Harbor Acts of June 25, 1910, June 26, 1934, August 30, 1935, August 26, 1937, October 27, 1965, and Section 4, Flood Control Act of 1944, provides for:

A channel 25 feet deep and 200 feet wide from Wilmington to a turning basin 400 feet wide and 550 feet long at Navassa, a distance of 2.9 miles; thence a channel 12 feet deep and 140 feet wide from Navassa to mileboard 30 at Acme, with 5 channel cutoffs 12 feet deep and 150 feet wide to eliminate sharp bends; thence a channel 8 feet deep from mileboard 30 to Fayetteville by constructing 3 locks and dams and by dredging river shoals; and recreational facilities at the locks and dams.

Total length of the project channels is 113.9 miles.

Details of the 3 locks are given in the following tabulation.

LOCK AND DAM	LOCATION	DISTANCE ABOVE WIL- MINGTON (MILES)	CHAMBER DIMENSIONS (FEET)	LIFT (FEET)
1	Kings Bluff	39	200 by 40	11
2	Browns Landing	71	200 by 40	9
Wm. O. Huske	Tolars Landing	95	300 by 40	9

As of January 1975 through August 1976, the controlling depths were: 11 feet for a middle width of 160 feet from Wilmington to Navassa Turning Basin; 11 feet in the turning basin; thence 9 feet to Mileboard 30 at Acme; thence 6 feet to Fayetteville.

Northeast Cape Fear River

Authorized by the River and Harbor Act of September 19, 1950, the existing project for improvement of the Northeast Cape Fear River beyond Wilmington provides for clearing the natural channel for small steamers to Hallsville and for pole boats to Kornegays Bridge, a distance of 103 miles above the mouth of the river.

As of April 1975, the controlling depth was 5 feet from above the Upper Turning Basin to Crooms Bridge at Mile 56.

Smiths Creek

Smiths Creek enters the Northeast Cape Fear River, approximately 0.34 mile above the Hilton Bridge. In accordance with the River and Harbor Act of August 30, 1935, a channel 12 feet deep at mean low water and 100 feet wide was dredged through the bar at the mouth; work was completed in 1937.

As of July 1972, the controlling depth was 8 feet at mean low water. The mean tidal range is 3.4 feet.

TIDAL RANGE AND CURRENTS

The mean range of tide at the entrance is 4.5 feet, at Southport 4.1 feet, and at Wilmington 4.2 feet. The tidal currents on the bar run with considerable velocity averaging 2.2 knots on the flood and 2.9 knots on the ebb. Opposite Southport the flood can exceed 3.0 knots and the ebb reach 4 knots; and in Wilmington the flood averages 1.7 knots and the ebb 1.5 knots.

ANCHORAGES

The anchorage basin at Wilmington is 2,000 feet long, 900 feet wide at the upper end, 1,100 feet wide at the lower end, with approaches 1,500 feet long at the upper end and 4,500 feet long at the lower end, with some widening of the transition channel at the downstream end.

Good anchorage is available in the Cape Fear River abreast the town of Southport. The holding ground is good, but, because of strong tidal currents, vessels should anchor with a good scope of chain. This anchorage is sometimes used as a harbor of refuge in the winter by coasting vessels.

Restricted Area

The restricted area at Sunny Point Army Terminal, Brunswick County, NC, includes that portion of Cape Fear

River due west of the main ship channel extending from U.S. Coast Guard Buoy No. 31A at the Terminal's north approach channel to U.S. Coast Guard Buoy No. 23A at the Terminal's south approach channel.

BRIDGES

Within the port area, three bridges cross the Cape Fear River, two cross the Northeast Cape Fear River, and two cross Smiths Creek. Details of these bridges are given in the table on page 8.

WEATHER CONDITIONS

The maritime location makes the climate of Wilmington unusually mild for its latitude. Summers are quite warm and humid, but excessive heat is rare. Seabreezes in the early afternoon tend to alleviate the heat. Long-term averages show afternoon temperatures reaching 90 degrees or higher a third of the days in midsummer, but several years may pass without 100-degree weather. Most winters are short and quite mild with a recorded low temperature of five degrees. Rarely is there an entire day when the temperature fails to rise above the freezing point.

Rainfall is usually ample and well-distributed throughout the year. The greatest amount falls during the summer in the form of thundershowers, which occur about one out of three days from June through August. During the winter, rain is generally of the slow and steady type lasting from one to two days. Hail occurs less than once a year. Several years may pass without any measureable amount of snow, and an appreciable accumulation on the ground is rare.

In common with most Atlantic Coastal localities, the area is subject to the effects of coastal storms and occasional hurricanes, which produce high winds, above normal tides, and heavy rains.

The information given on the following page was compiled by the National Weather Service Station at the New Hanover County airport, Wilmington, NC, and published by the

Environmental Data Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

METEOROLOGICAL DATA FOR PERIOD OF RECORD

TIME	NORMAL DAILY TEMPERATURE F ^o		NORMAL TOTAL PRECIPITATION (INCHES)	PREVAILING DIRECTION OF WINDS	HEAVY FOG DAYS
	MAXIMUM	MINIMUM			
No. of Years	29	29	29	12	27
January.....	56.6	36.2	3.18	N	3
February....	58.7	37.5	3.39	NW	2
March.....	64.9	43.7	4.05	SSW	2
April.....	74.3	52.2	2.94	SSW	2
May.....	81.4	60.9	3.97	SSW	2
June.....	86.8	68.2	5.58	SSW	2
July.....	88.8	72.0	8.34	SSW	1
August.....	88.0	71.0	6.82	SW	1
September...	83.5	65.9	5.64	N	3
October.....	75.4	55.1	3.31	N	3
November....	66.8	44.3	3.01	N	3
December....	58.2	36.7	3.36	N	2
Year.....	73.6	53.7	53.59	SSW	26

CAPE FEAR RIVER CHANNEL DEPTHS

7

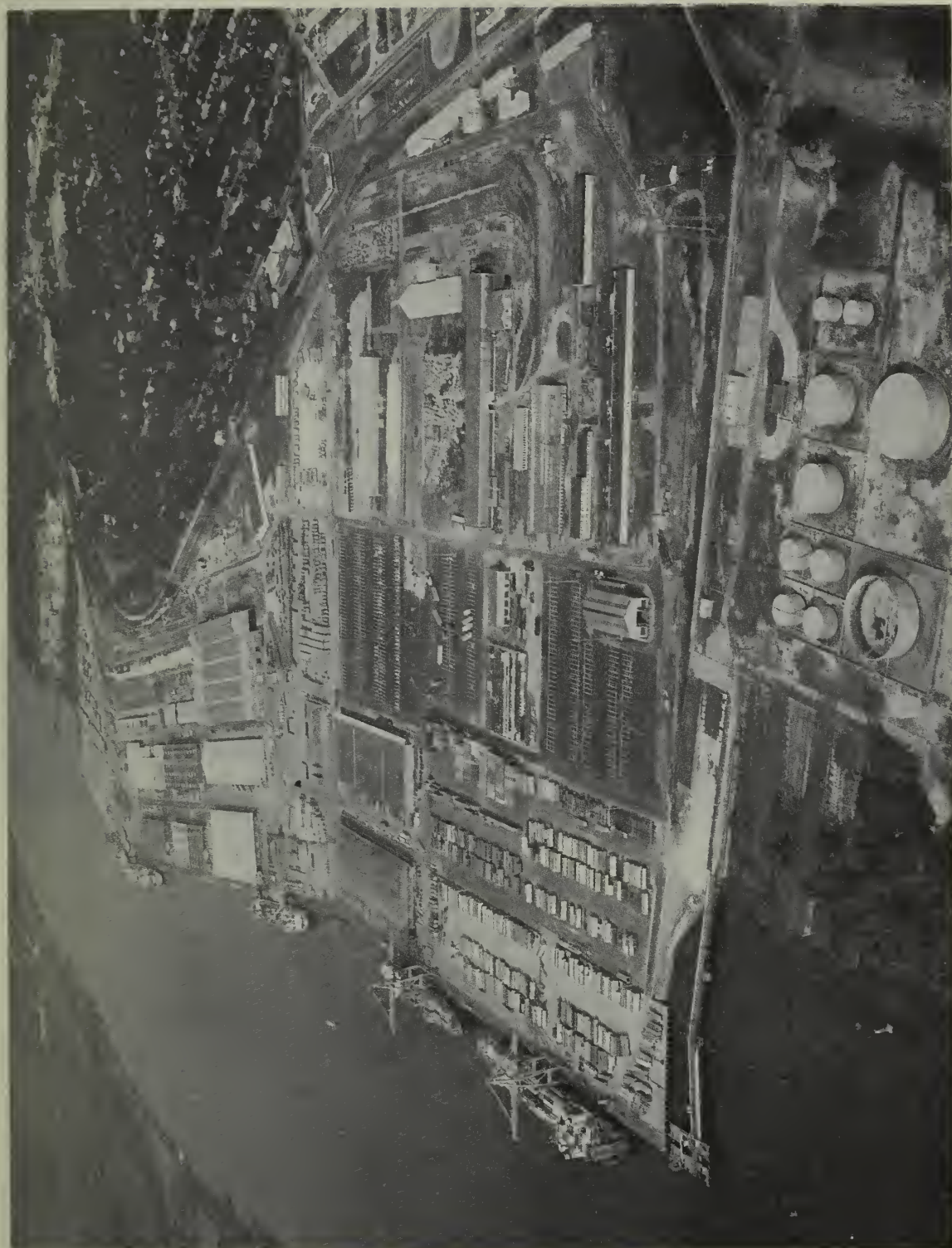
CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOW WATER (MLW)						PROJECT DIMENSIONS		
NAME OF CHANNEL	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (NAUT. MILES)	DEPTH MLW (FEET)
Baldhead Shoal	A35.5	37.5	38.0	35.5	1-79	500	3.0	40
Smith Island	26.0	36.5	39.5	A37.0	3-79	500	0.8	40
Baldhead Caswell	A38.5	40.0	40.0	A39.5	8-78	500	0.3	40
Southport Channel	40.0	40.0	40.0	A36.5	9-78	500	0.9	40
Battery Island Channel	40.0	40.0	40.0	A34.0	8-78	500	0.4	40
Lower Swash	A36.0	40.0	40.0	A34.5	8-78	400	1.4	38
Snows Marsh	A35.0	36.0	34.0	A34.0	1-79	400	2.6	38
Horseshoe Shoal	30.0	35.5	36.5	38.0	8-78,6-79	400	1.0	38
Reaves Point	A36.5	38.0	37.5	A36.5	1-79	400	1.0	38
Lower Midnight	35.0	38.0	38.0	A35.5	8-78	400	1.5	38
Upper Midnight	A34.5	37.0	37.5	A35.0	1-79	400	2.3	38
Lower Lilliput	A36.0	38.0	37.0	A32.5	1-79	400	1.7	38
Upper Lilliput	37.5	37.5	37.0	A30.0	1-79	400	1.7	38
Keg Island	A36.5	38.0	38.0	A31.0	7-78	400	1.3	38
Big Island Lower	A37.5	38.0	38.0	A30.0	7-78	400	0.7	38
Big Island Upper	A37.5	38.0	38.0	A34.0	7-78	400	0.4	38
Lower Brunswick	A20.5	36.5	38.0	A35.0	7-78	400	1.4	38
Upper Brunswick	A21.5	38.0	38.0	A33.0	7-78	400	0.8	38
Fourth East Jetty	A33.0	38.0	38.0	A36.0	11-78	400	1.2	38
Between Channel	A32.5	36.0	36.5	A33.5	1-79	400-600	0.7	38
Anchorage Basin	A25.0	31.5	32.5	A27.5	1-79	900-1100	1.1	38
Thence to Turning Basin	A28.0	34.0	35.0	A27.0	3-78	300-400	0.9	32
Turning Basin	A25.5	28.0	32.0	A26.5	3-78	800	0.5	32
Channel thru Turning Basin	A30.0	33.0	32.0	A26.5	3-78	400	0.5	32
Thence to Hilton Bridge	A28.5	30.0	30.0	A29.0	4-78	300	0.5	32
Thence to Upper Turning Basin	25.0	25.0	25.0	A16.5	4-78	200	1.0	25
Upper Turning Basin	25.0	25.0	24.5	A19.5	4-78	700	0.1	25
Thence to end of project	A11.0	14.0	16.0	A17.5	4-78	200	0.3	25

A- Along edge of channel.

LIST OF BRIDGES

STATUTE MILES ABOVE MOUTH	LOCATION AND NAME	TYPE	CHANNEL SPANS		PURPOSE FOR WHICH USED
			HORIZONTAL CLEARANCE (FEET)	VERTICAL CLEARANCE MHW (FEET)	
	<u>Cape Fear River</u>				
27.0	Cape Fear Memorial Bridge	Vertical lift	350	65.0 (1)	
28.5	Cape Fear River Bridge...	Bascule	120	135.0 (2)	Highway (3)
32.0	Seaboard Coast Line Railroad Bridge.....	Bascule	100	26.0 (1)	Highway (4)
	<u>Northeast Cape Fear River</u>			6.0 (1)	Railroad
1.0	Northeast River Bridge...	Bascule	200	40.0 (1)	Highway (5)
1.5	Hilton Bridge.....	Bascule	200	4.0 (1)	Railroad
	<u>Smiths Creek</u>				
1.5	Smiths Creek Bridge.....	Swing	45	3.0 (1)	Highway (5)
2.3	Seaboard Coast Line Railroad Bridge.....	Fixed	100	12.0	Railroad

- (1) Closed position.
- (2) Up position.
- (3) U.S. Highway Nos. 17, 74, 76,
and 421.
- (4) U.S. Highway No. 421 and State
Highway No. 133.
- (5) U.S. Highway No. 117 and State
Highway No. 133.



North Carolina State Ports Authority, Wilmington Terminal
(P.W.D. Ref. Nos. 6, 7, 8, and 9)



Gold Bond Building Products Wharf
(P.W.D. Ref. No. 2)



North Carolina State Ports Authority
Berths A and B
(P.W.D. Ref. No. 9)



Cape Fear Technical Institute Wharf
(P.W.D. Ref. No. 22)



Almont Shipping Co. North Berth
(P.W.D. Ref. No. 27)



Stevedores, Inc. Barge Berth
(P.W.D. Ref. No. 28)



Cape Fear Towing Co. Wharf
(P.W.D. Ref. No. 44)

THE PORT OF WILMINGTON, NC

P O R T A N D H A R B O R F A C I L I T I E S

PIERS, WHARVES, AND DOCKS

Forty-four piers, wharves, and docks are described in this report for the Port of Wilmington. Twenty-seven of these facilities are on the Cape Fear River; 16 on the Northeast Cape Fear River; and 1 on Smiths Creek. Twenty-nine are concentrated along the city's waterfront, on the left banks of the 2 rivers, from a point 1.5 miles south of the foot of Shipyard Boulevard extended to a point just above the Hilton Railroad Bridge; and 8 are opposite the city along the right banks of the rivers.

Each facility is described under a reference number in the table of Piers, Wharves, and Docks beginning on page 14. These reference numbers designate facility locations on the accompanying Port Facilities Map.

The numerous waterfront facilities in the port used exclusively by recreational craft, and generally those docking facilities providing nonmaritime use are not included in this report.

The table on the following page summarizes the functional uses of the various piers, wharves, and docks at Wilmington. Many of these wharves are used for multiple purposes as indicated in the table; each can be identified by its respective P.W.D. reference number.

The North Carolina State Ports Authority operates the facilities engaged in handling general cargo in the port. A summary of these facilities is given in the table on page 13.

[illegible]

A - LEFT BANK, NORTHEAST CAPE FEAR RIVER
D - LEFT BANK, CAPE FEAR RIVER

B - RIGHT BANK, SMITHS CREEK
E - RIGHT BANK, CAPE FEAR RIVER

C - RIGHT BANK, NORTHEAST CAPE FEAR RIVER

SUMMARY OF GENERAL CARGO FACILITIES

P.W.D. REF. NO.	TERMINAL	BERTHING SPACE (FEET)	DEPTHS ALONGSIDE AT MLW (FEET)	TRANSIT SHEDS		OPEN STORAGE AREA	
				NO.	CARGO SPACE (SQ. FT.)	ACRES	20-FOOT CONTAINERS
7(1) 8 9(1)	<u>North Carolina State</u> <u>Ports Authority</u> Berths 6, 7, and 8..	1,750	38	1	108,700(2)	-	1,500(4)
	Berths 1, 2, 3, 4, and 5.....	2,900	38	3	202,500(3)	17.0	-
	Berths A and B.....	1,213	38	-	-	13.8	-
	TOTAL.....	5,863	--	4	311,200	30.8	1,500

- (1) Containerized and conventional general cargo handling, heavy-lift items; and various dry bulk commodities including: scrap metal, steel products, salt, lumber, and ores.
- (2) Net space, gross space 150,000 square feet.
- (3) Total net space of 3 transit sheds, total gross space 270,000 square feet.
- (4) Containers on chassis.

PIERS, WHARVES, AND DOCKS
Left bank, Cape Fear River

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP

REFERENCE NUMBER ON MAP	1	Dock Code No. -	2	Dock Code No. -	3	Dock Code No. 075																																																																																												
NAME	River Road Boat Basin.		Gold Bond Building Products Wharf.		Exxon Company U.S.A. Wharf.																																																																																													
LOCATION ON WATERFRONT	Approximately 1.5 miles below foot of Shipyard Boulevard extended.		Approximately 1.2 miles below foot of Shipyard Boulevard extended.		Approximately 1.0 mile below foot of Shipyard Boulevard extended.																																																																																													
OWNED BY	J. W. Stackhouse.		Gold Bond Building Products Division, National Gypsum Company.		Exxon Company, U.S.A.																																																																																													
OPERATED BY	O.E. DuRant.		do.		do.																																																																																													
PURPOSE FOR WHICH USED	Mooring company-owned line-handling boats.		Receipt of gypsum by self-unloading vessel.		Receipt and shipment of petroleum products; bunkering vessels; fueling tugboats; and loading barges for bunkering vessels at berth in harbor.																																																																																													
TYPE OF CONSTRUCTION	East side: timber pile, concrete-decked wharf with timber mooring piles in line with face; north and south sides: natural bank; west side: timber frame boathouse with 15 stalls.		Concrete pile, concrete-decked, offshore wharf with 1,600 by 10-foot conveyor-belt and walkway approach; catwalk extends to 2 breasting dolphins in line with face on upper side, all fronted by rubber fender system; 2 mooring anchors at rear.		Timber pile, concrete-decked, offshore wharf with 490- by 16-foot pipeline and walkway approach; 4 breasting dolphins in line with face. A 4-foot wide timber walkway extends from 60 feet in rear of face to 2 mooring dolphins on each side; upper 215-foot walkway serves as approach to barge-loading platform.																																																																																													
DESCRIPTION	<table><thead><tr><th></th><th colspan="3">Basin</th><th>Face</th><th>Lower side</th><th>Upper side</th><th>Wharf</th><th>Barge Platform</th></tr><tr><th></th><th>East side</th><th>North/South</th><th>West</th><th></th><th></th><th></th><th></th><th></th></tr></thead><tbody><tr><td>Dimensions (Feet)</td><td>60</td><td>250/150</td><td>340</td><td>30</td><td>32</td><td>30</td><td>82 by 50</td><td>30 by 20</td></tr><tr><td>Depth Alongside at MLW Do.</td><td>12</td><td>12</td><td>12</td><td>35</td><td>-</td><td>-</td><td>40</td><td>Face, 25; Rear of Face, 12</td></tr><tr><td>Usable Berthing Space Do.</td><td>92 w/piles.</td><td>400, total.</td><td>Boat stalls.</td><td>810 w/anchors</td><td>-</td><td>-</td><td>836 w/dolphins</td><td>166 w/dolphins, each.</td></tr><tr><td>Width of Apron Do.</td><td>Open.</td><td>Open.</td><td>-</td><td>3 and open.</td><td></td><td></td><td>Open.</td><td></td></tr><tr><td>Height of Deck Above MLW Do.</td><td>8 and 6</td><td>4</td><td>-</td><td>11</td><td></td><td></td><td>13.2</td><td></td></tr><tr><td>Load Capacity per Sq.Ft. (Lbs.)</td><td>-</td><td></td><td></td><td>-</td><td></td><td></td><td>-</td><td></td></tr><tr><td>Lighted or Unlighted</td><td>Unlighted.</td><td></td><td></td><td>Lighted.</td><td></td><td></td><td>Lighted.</td><td></td></tr><tr><td>TRANSIT SHEDS</td><td>None.</td><td></td><td></td><td>None.</td><td></td><td></td><td>None.</td><td></td></tr></tbody></table>			Basin			Face	Lower side	Upper side	Wharf	Barge Platform		East side	North/South	West						Dimensions (Feet)	60	250/150	340	30	32	30	82 by 50	30 by 20	Depth Alongside at MLW Do.	12	12	12	35	-	-	40	Face, 25; Rear of Face, 12	Usable Berthing Space Do.	92 w/piles.	400, total.	Boat stalls.	810 w/anchors	-	-	836 w/dolphins	166 w/dolphins, each.	Width of Apron Do.	Open.	Open.	-	3 and open.			Open.		Height of Deck Above MLW Do.	8 and 6	4	-	11			13.2		Load Capacity per Sq.Ft. (Lbs.)	-			-			-		Lighted or Unlighted	Unlighted.			Lighted.			Lighted.		TRANSIT SHEDS	None.			None.			None.							
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Cargo Doors																																																																																																		
MECHANICAL HANDLING FACILITIES	None.		Self-unloading vessel unloads gypsum into steel hopper on wharf served by 54-inch covered, electric-belt conveyor system extending along approach, thence via inclined trestle to elevated steel tower served by horizontal, radial stacker arm at storage area in rear. Vessel unloading rate 1,000 tons per hour.		Wharf: Steel tower supports three 8-inch hoses and five 10-inch, swivel-jointed, pipeline arms for tanker connections; hoses are handled by a U-shaped, pneumatic-operated, hinged boom on tower with a 25-foot outboard reach.																																																																																													
RAILWAY CONNECTIONS	None		One surface track serving plant at rear connects with Seaboard Coast Line Railroad.		Plant trackage at terminal in rear serves 2 tank car loading racks and warehouse; connects with Seaboard Coast Line Railroad.																																																																																													
HIGHWAY CONNECTIONS	Via driveway, gravel, various widths, from River Road, asphalt, 20 feet wide		Via driveway, asphalt, various widths, from Sunnyvale Drive, asphalt, 24 feet wide, from River Road, asphalt, 20 feet wide.		Via private road, asphalt, 20 feet wide, from River Road, asphalt, 24 feet wide.																																																																																													
WATER SUPPLY	Through 2½-inch line with ¾-inch hose connections.		Through 1½-inch line.		Through 4-inch line with 2½-inch connections to wharf; through 2-inch line with ¾-inch connections to barge platform.																																																																																													
ELECTRIC SUPPLY	A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle		A.C., 220/440 volts, 3-phase, 60-cycle		None.																																																																																													
FIRE PROTECTION	Portable fire pump and hose		Hydrants and hand extinguishers.		Waterline, stand pipe, hose, chemical cart, and two 20-pound dry powder guns.																																																																																													
REMARKS	Entrance to basin from river is approximately 45 feet wide. Additional berthing available along the sides of a 40- to 160-foot dredged slip at each end of east side mooring entrance		Storage area at rear has capacity for approximately 100,000 tons of gypsum.		One 20-, five 10-, one 8-, two 6-, and one 4-inch pipelines extend from wharf; and three 8- and one 4-inch pipelines extend from barge platform to 32 steel storage tanks at terminal in rear, total capacity 1,377,490 barrels. Vessels are bunkered through 8-inch line at an average rate of 1,500 barrels per hour; harbor-bunkering barges are loaded at an average rate of 2,000 barrels per hour																																																																																													

PIERS, WHARVES, AND DOCKS
Left bank, Cape Fear River

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	Dock Code No. 080			Dock Code No. 084			Dock Code No. 100		
NAME	Mobil Oil Corp. Wharf.			Petroleum Fuel and Terminal Company Wharf.			North Carolina State Ports Authority Fuel Wharf.		
LOCATION ON WATERFRONT	Approximately 0.6 mile below foot of Shipyard Boulevard extended.			Approximately 0.3 mile below foot of Shipyard Boulevard extended.			Foot of Shipyard Boulevard extended.		
OWNED BY	Mobil Oil Corp.			Petroleum Fuel and Terminal Company, subsidiary of Apex Oil Company; Carolina Power and Light Co., and Sunmark Industries Division of Sun Oil Company of PA.			North Carolina State Ports Authority; Texaco, Inc.; and Sunmark Industries Division of Sun Oil Company of PA.		
OPERATED BY	do.			do.			do.		
PURPOSE FOR WHICH USED	Receipt and shipment of petroleum products; receipt of asphalt.			Receipt and shipment of petroleum products and petrochemicals; bunkering vessels and tugboats, loading barges for bunkering vessels at berth in harbor.			Receipt of petroleum products. (See Remarks.)		
TYPE OF CONSTRUCTION	Steel pile, timber-decked, offshore wharf with 885- by 12-foot, timber walkway and pipeline trestle approach; catwalk extends from each side of wharf to 2 breasting dolphins in line with face; 4 mooring dolphins at rear.			Timber pile, timber-decked, offshore wharf with 600- by 10-foot timber walkway and pipeline trestle approach; 2 cellular steel sheet pile breasting dolphins in line with face; 6 mooring dolphins at rear.			Timber pile, timber-decked, offshore wharf with angular timber walkway and pipeline trestle approach; inner portion of approach, 355 by 20 feet; outer portion, 170 by 29 feet, two rows of 3, and one row of 4-timber mooring dolphins on lower side, the outer row in line with face of wharf.		
DESCRIPTION	Face	Lower side	Upper side	Face	Lower side	Upper side	Face	Lower side	Upper side
Dimensions (Feet)	40	35	35	120	20	20	122	64	64
Depth Alongside at MLW Do.	34	-	-	33	-	-	34	-	-
Usable Berthing Space Do.	240 w/dolphins	-	-	260 w/dolphins	-	-	350 w/dolphins	-	-
Width of Apron Do.	Open.			Open.			Open.		
Height of Deck Above MLW Do.	11			10			15.9		
Load Capacity per Sq.Ft. (Lbs.)	-			250			150		
Lighted or Unlighted	Lighted.			Lighted.			Lighted.		
TRANSIT SHEDS	None.			None.			None.		
Number and Type of Construction									
Length and Width (Feet)									
Height Inside Do.									
Floor Area for Cargo (Sq.Ft.)									
Load Capacity per Sq.Ft. (Lbs.)									
Cargo Doors									
MECHANICAL HANDLING FACILITIES	Steel tower on wharf supports pipeline manifold connections, hoses, and electric hoists for handling hoses.			Six pneumatically operated derricks for handling hose, each equipped with two 30-foot booms.			Two steel structures on wharf for handling hoses; one is electric- and one is pneumatic-operated.		
RAILWAY CONNECTIONS	Surface tracks serve a 4-car capacity tank car loading rack located at Mobil Oil Corp. terminal in rear, and an 8-car capacity tank car loading rack at the Amoco Oil Company terminal; connect with Seaboard Coast Line Railroad.			Surface tracks serve a 15-car capacity tank car loading rack at Shell Oil Co. terminal, a 4-car capacity rack at Sun Oil Co. terminal, and a 4-car capacity rack at Carolina Power and Light Co. terminal; all tracks connect with Seaboard Coast Line Railroad.			None.		
HIGHWAY CONNECTIONS	Via private road, from River Road, asphalt, 24 feet wide.			Same as Ref. No. 4.			Same as Ref. No. 4.		
WATER SUPPLY (Available to Vessels)	Through 6-inch line with 2½-inch hose connections.			Through 3-inch line.			None.		
ELECTRIC CURRENT (Available to Vessels)	None.			A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle.			None.		
FIRE PROTECTION (Other than City)	Chemical carts and hand extinguishers.			Water line, 2 pumps, hose, chemical cart, and hand extinguishers.			One 4-inch fire line, hose, chemical cart, and hand extinguishers.		
REMARKS	Four steel pile concrete-capped mooring dolphins located in rear of breasting dolphins. Mobil Oil Corp.: One 12-, one 10-, and one 8-inch pipelines extend from wharf to 5 steel storage tanks at rear, total capacity 256,000 barrels. Amoco Oil Co.: Two 12-inch pipelines (1 steam-traced for asphalt and 1 for other petroleum products) extend from wharf to 5 asphalt storage tanks, total capacity 273,000 barrels; 2 petroleum storage tanks, total capacity 74,000 barrels, and 36 blending tanks of various capacities.			Petroleum Fuel and Terminal Co.: One 14-, one 12-, one 10-, seven 8-, and one 6-inch pipelines extend from wharf to 17 steel storage tanks, total capacity 450,000 barrels. Carolina Power and Light Co.: Four 8-inch pipelines extend from wharf to 9 steel storage tanks in rear on opposite side of River Road, total capacity 370,000 barrels. Sunmark Industries Division of Sun Oil Company of PA: Two 12- and one 8-inch pipelines extend from Petroleum Fuel and Terminal Co. manifold at rear to 7 steel storage tanks, total capacity 336,070 barrels.			At time of survey wharf was operated to maintain service to terminals listed. Future plans call for construction of a container terminal by the North Carolina State Ports Authority. Texaco, Inc.: Two 10-, five 6-, and two 4-inch pipelines extend from wharf to 9 steel storage tanks in rear, total capacity 332,000 barrels. Sunmark Industries Division of Sun Oil Company of PA: One 12- and one 10-inch pipelines extend from wharf to 5 steel storage tanks located on opposite side of River Road, total capacity 247,110 barrels.		

PIERS, WHARVES, AND DOCKS

Left bank, Cape Fear River

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	7	Dock Code No. 130	8	Dock Code No. 130	9	Dock Code No. 130
NAME	North Carolina State Ports Authority, Berths 6, 7, and 8.		North Carolina State Ports Authority Berths 1, 2, 3, 4, and 5.		North Carolina State Ports Authority Berths A and B.	
LOCATION ON WATERFRONT	Between foot of Shipyard and Central Boulevards extended.		Between foot of Central Boulevard and Sunset Avenue extended.		Above foot of Sunset Avenue extended.	
OWNED BY	North Carolina State Ports Authority.		North Carolina State Ports Authority.		North Carolina State Ports Authority.	
OPERATED BY	do.		do.		do.	
PURPOSE FOR WHICH USED	Receipt and shipment of general and containerized cargo, heavy-lift items and various dry bulk commodities including scrap metal, steel products, salt, lumber, and ores in foreign and domestic trades.		Receipt and shipment of general and containerized cargo heavy-lift items and various dry bulk commodities including scrap metal, steel products, salt, lumber, and ores in foreign and domestic trades.		Receipt and shipment of general and containerized cargo, heavy-lift items, and various dry bulk commodities including scrap metal, steel products, salt, lumber, chemicals, and ores in foreign and domestic trades.	
TYPE OF CONSTRUCTION	Concrete pile, concrete-decked wharf; fronted by rubber fender system.		Concrete pile, concrete-decked wharf spanning steel sheet pile bulkhead with solid fill; fronted by rubber fender system.		Steel sheet pile bulkhead with concrete-surfaced solid fill on concrete relieving platform supported by concrete pile, concrete-decked extension; fronted by rubber fender system.	
DESCRIPTION	Face	Lower side	Face		Face	Upper side
Dimensions (Feet)	1,750	295	2,900		1,213	295
Depth Alongside at MLW Do.	38	-	38		38	-
Usable Berthing Space Do.	1,750	-	2,900		1,213	-
Width of Apron Do.	50 and open		42, 44, and open.		Open.	
Height of Deck Above MLW Do.	12		12		12	
Load Capacity per Sq.Ft. (Lbs.)	800		500		800	
Lighted or Unlighted	Lighted.		Lighted.		Lighted.	
TRANSIT SHEDS	Shed No. 4: Concrete with concrete floor; shed divided into 2 sections by firewall.		Sheds Nos. 1 and 2: Steel frame, brick walls; concrete floor.	Shed No. 3: Concrete with concrete floor.	None.	
Number and Type of Construction						
Length and Width (Feet)	517.5 by 280		452 by 167, each.	517.5 by 230		
Height Inside Do.	18		16, each.	17		
Floor Area for Cargo (Sq.Ft.)	108,700 net.		56,600 net, each.	89,300 net.		
Load Capacity per Sq.Ft. (Lbs.)	800		500, each.	600		
Cargo Doors	Shipside: Ten; 20 by 14, each.		Ten each; 20 by 14.		Six; 20 by 14.	
Rear:	Ten; 16 by 14 to platform, each.		Two each; 20 by 14; eight 10 by 10.		Eight, 16 by 14 car loading.	
Each end:	Two, 20 by 14 truck entrance and three 16 by 14 to platform, each.		One, 20 by 14 entrance and two 10 by 10 platform.		One, 20 by 14 entrance and three 16 by 14 platform.	
MECHANICAL HANDLING FACILITIES	Two 40-ton, diesel-electric, traveling, container-handling cranes, each with hinged, cantilevered boom having 115-foot outreach and 63-foot backreach; cranes have a 210-foot container travel length and an operating rate of 30 containers per hour. Four diesel-electric, traveling, revolving, full-portal gantry cranes: one 225-tons at 45-foot radius, and 90-tons at 60-foot radius; and two 45-tons each, or 90 tons combined, at 40-foot radius, and 27 tons each at 60-foot radius; and one 140-ton, diesel mobile crane with boom length to 270 feet. Cranes are equipped with nine electromagnets up to 80-inch diameter; two 10-, two 6-, one 4-, and two 2-cubic yard clamshell buckets; and 40- and 20-foot container-handling frames. In addition, two 50-ton diesel, mobile container handling lifts, fifty nine 4- to 26-ton diesel or gasoline fork lift trucks; several with roll and bale clamps, six cargo trailers, and one 115- and three 110-ton diesel locomotives. Additional equipment furnished by stevedoring companies as required.					
RAILWAY CONNECTIONS	Two surface tracks on apron, total length 2,100 feet; and 2 platform-level tracks along rear of transit shed, total length 1,000 feet; join additional terminal trackage in rear connecting with Seaboard Coast Line Railroad		Two surface tracks on apron, total length 5,800 feet; and 2 platform-level tracks along rear of each transit shed, total length 2,844 feet; join additional terminal trackage in rear connecting with Seaboard Coast Line Railroad.		Two surface tracks on apron, total length 2,400 feet; and 2 platform-level tracks along rear of open wharf, total length 2,660 feet; join additional terminal trackage in rear connecting with Seaboard Coast Line Railroad.	
HIGHWAY CONNECTIONS	Via terminal roadway (Maritime Boulevard), asphalt, 46-54 feet wide, from Burnett Boulevard, asphalt, 24-30 feet wide.		Same as Ref. No. 7.		Same as Ref. No. 7	
WATER SUPPLY (Available to Vessels)	Through 6-inch line with 2½-inch hose connections.		Same as Ref. No. 7.		Same as Ref. No. 7.	
ELECTRIC CURRENT (Available to Vessels)	None.		None.		None.	
FIRE PROTECTION (Other than City)	Water tower, sprinkler systems in transit sheds and warehouses, hydrants, hose, hand extinguishers, and watchmen.					
REMARKS	Face of wharf is contiguous with Ref. No. 8. At time of survey, paved open storage area at rear included maneuvering area and storage space for approximately 1,500 containers on chassis, with additional paved storage areas under construction. Future plans call for conversion of portion of Warehouse No. 4 (S.W. Ref. No. 3) located in rear of transit shed, into a container freight station. Trucks have access to interior of transit sheds, platforms, and to wharf apron. Terminal trackage in rear of Ref. Nos. 7, 8, and 9 have storage capacity for approximately 500 cars.		Face of wharf is contiguous with Ref. Nos. 7 and 9. Each transit shed is divided into 2 sections by a firewall with one 20- by 14-foot door. Approximately 2 acres of open storage area on lower portion of wharf and approximately 15 acres of paved and unpaved open storage area at terminal in rear. Warehouses Nos. 1, 2, and 3 (S.W. Ref. Nos. 6, 7, and 8) located in rear of transit sheds. Fumigation plant with 2 vacuum chambers in rear of Warehouse No. 3. Trucks have access to interior of transit sheds, platforms at each end of sheds, and to wharf apron.		Face of Wharf is contiguous with Ref. No. 8. Approximately 6.9 acres of open storage space will be located on wharf; a 75-foot wide truck ramp connects wharf with an additional 6.9 acres of paved, open storage space at rear. At time of survey future plans called for construction of a traveling bulk-unloader, conveyor belt system and three silos with approximately 70,000-ton capacity, total for handling alumina.	

PIERS, WHARVES, AND DOCKS

Left bank, Cape Fear River

17

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	10 Dock Code No. 160			11 Dock Code No. 170			12 Dock Code No. 192		
NAME	Paktank Atlantic Company Wharf.			Chevron U.S.A. Wharf.			Southern Wood Piedmont Co. Wharf.		
LOCATION ON WATERFRONT	Approximately 1.2 miles below Cape Fear Memorial Bridge.			Approximately 1.1 miles below Cape Fear Memorial Bridge.			Approximately 0.8 mile below Cape Fear Memorial Bridge.		
OWNED BY	North Carolina State Ports Authority.			Chevron U.S.A., Inc.			Southern Wood Piedmont Co.		
OPERATED BY	Paktank Atlantic Company.			do.			do.		
PURPOSE FOR WHICH USED	Receipt and shipment of liquid chemicals, and petrochemicals.			Receipt and shipment of asphalt by barge and tanker.			Receipt of creosote by barge and tanker.		
TYPE OF CONSTRUCTION	Timber pile, timber-decked, offshore wharf with 660- by 23-foot timber pipeline trestle and 10-foot wide roadway approach; 3 steel pile and one cellular breasting dolphins in line with face. Barge berth at rear and between (Continued under Remarks)			Timber pile, timber-decked, offshore wharf with 310- by 11-foot timber walkway and pipeline trestle approach; 3 steel pile, rectangular-shaped breasting dolphins in line with face.			Timber pile, timber-decked, offshore wharf with 90- by 6-foot timber approach from center of outer end of Old Municipal Wharf; 4 timber pile mooring dolphins in line with face.		
DESCRIPTION	Face	Lower side	Upper side	Face	Lower side	Upper side	Face	Lower side	Upper side
Dimensions (Feet)	70	30	30	35	15	15	30	20	20
Depth Alongside at MLW Do.	38	-	-	24	-	-	25	-	-
Usable Berthing Space Do.	290 w/dolphins	(See Remarks)	-	240 w/dolphins.	-	-	360 w/dolphins	-	-
Width of Apron Do.	Open.			Open.			Open.		
Height of Deck Above MLW Do.	12			10			10		
Load Capacity per Sq.Ft. (Lbs.)	-			-			-		
Lighted or Unlighted	Lighted.			Lighted.			Lighted.		
TRANSIT SHEDS	None.			None.			None.		
Number and Type of Construction	Two steel structures on wharf, each with a 5-ton, pneumatically-operated, mast-and-boom derrick with 32-foot boom for handling hose.			None.			Three 25-ton, diesel-electric, locomotive cranes, each with 50-foot boom; cranes used for serving plant in rear.		
Length and Width (Feet)									
Height Inside Do.									
Floor Area for Cargo (Sq.Ft.)									
Load Capacity per Sq.Ft. (Lbs.)									
Cargo Doors									
MECHANICAL HANDLING FACILITIES	Two steel structures on wharf, each with a 5-ton, pneumatically-operated, mast-and-boom derrick with 32-foot boom for handling hose.			None.			Three 25-ton, diesel-electric, locomotive cranes, each with 50-foot boom; cranes used for serving plant in rear.		
RAILWAY CONNECTIONS	One surface track serves a 5-car capacity tank car loading rack at terminal in rear; connects with Seaboard Coast Line Railroad.			None.			Plant trackage in rear connects with Seaboard Coast Line Railroad.		
HIGHWAY CONNECTIONS	Via private road, gravel, various widths, from Woodbine Street, asphalt, 22 feet wide.			Same as Ref. No. 10.			Via private road, gravel, various widths, from Greenfield and South Front Streets, asphalt, 27 feet wide.		
WATER SUPPLY (Available to Vessels)	Through 4-inch line with 2½-inch hose connections.			None.			None.		
ELECTRIC CURRENT (Available to Vessels)	A.C., 110 volts, single-phase, 60-cycle; A.C., 440 volts, 3-phase, 60-cycle.			None.			None.		
FIRE PROTECTION (Other than City)	Water line, hose cart, hand extinguishers, and watchmen.			Hand extinguishers at plant in rear, and watchmen.			Hydrant, hose, and hand extinguishers.		
REMARKS	2 lower steel breasting dolphins and 2 parallel timber mooring dolphins located 80 feet in rear; barge berths end-to against steel pile dolphin on lower side of wharf in 18 feet of water. Following pipelines extend from wharf to steel storage tanks in rear: one 10-inch, steam-traced line to 3 paraxylene tanks, total capacity 155,000 barrels; two 10-inch lines to 5 ethylene glycol tanks, total capacity, 262,000 barrels; one 10-inch line to 2 methanol tanks, total capacity 151,000 barrels; one 8-inch line to 3 acetic acid tanks, total capacity 120,000 barrels; two 8-inch lines to 2 caustic soda tanks, total capacity 66,000 barrels; one 8-inch line to 2 nitrogen tanks, total capacity 42,000 barrels; one 6-inch line to 2 miscellaneous solvents tanks, total capacity 5,360 barrels; and one 4-inch line to one 720-barrel diethylene glycol tank.			Two 10-inch pipelines extend from wharf to 10 steel storage tanks in rear, total capacity 127,100 barrels; one 3-inch steam line serves wharf.			One 6-inch pipeline extends from wharf to 4 steel storage tanks at plant in rear, total capacity 1,750,000 gallons.		

PIERS, WHARVES, AND DOCKS

Left bank, Cape Fear River

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	Dock Code No. 214			Dock Code No. 219			Dock Code No. 221		
NAME	Amerada Hess Corp. Wharf.			Cape Fear Terminal Wharf.			Ingredient Technology Corp. Wharf.		
LOCATION ON WATERFRONT	Approximately 0.7 mile below Cape Fear Memorial Bridge.			Approximately 0.5 mile below Cape Fear Memorial Bridge.			Approximately 0.2 mile below Cape Fear Memorial Bridge.		
OWNED BY	Amerada Hess Corp.			Union Oil Co. of California and Gulf Oil Co.-U.S., Division of Gulf Oil Corp.			Ingredient Technology Corp.		
OPERATED BY	do.			Union Oil Co. of California and others. (See Remarks.)			do.		
PURPOSE FOR WHICH USED	Receipt and shipment of petroleum products; bunkering tankers berthed at wharf; loading barges for bunkering vessels at berth in harbor.			Receipt and shipment of petroleum products and petrochemicals; fueling tugboats and other types of small vessels.			Receipt of molasses.		
TYPE OF CONSTRUCTION	Timber pile, timber-decked, offshore wharf with 375- by 8-foot timber walkway and pipeline approach; 2 rectangular-shaped, breasting dolphins in line with face; timber walkways extend from sides of wharf to dolphins.			Three timber pile, timber-decked, offshore wharves connected by timber catwalks; center wharf, 300- by 60-foot timber approach, upper wharf 265- by 12-foot, timber walkway and pipeline trestle approach; 4 timber breasting dolphins in line with face.			Concrete bulkhead, solid fill, with timber pile, timber-decked extension; fronted by timber breasting dolphins.		
DESCRIPTION	Face	Lower side	Upper side	Lower wharf	Center wharf	Upper wharf	Face	Lower side	Upper side
Dimensions (Feet)	60	30	30	30 by 30	151 by 30	60 by 40	147	70	70
Depth Alongside at MLW Do.	34	-	-	34	34	34	34	-	-
Usable Berthing Space Do.	240 w/dolphins	-	-	620, total w/3 wharves and 4 dolphins.			147	-	-
Width of Apron Do.	Open.			Open.	Open.	Open.	18		
Height of Dock Above MLW Do.	8			10	10	10	10		
Load Capacity per Sq.Ft. (Lbs.)	-			-	-	-	250		
Lighted or Unlighted	Lighted.			Lighted.	Lighted.	Lighted.	Lighted.		
TRANSIT SHEDS	None.			None.			None.		
Number and Type of Construction	One hand-operated, mast-and-boom derrick with 30-foot boom for handling hose.			Two 3/4-ton, electric, mast-and-boom derricks, each with 15-foot boom for handling hose.			None.		
Length and Width (Feet)									
Height Inside Do.									
Floor Area for Cargo (Sq.Ft.)									
Load Capacity per Sq.Ft. (Lbs.)									
Cargo Doors									
MECHANICAL HANDLING FACILITIES	One hand-operated, mast-and-boom derrick with 30-foot boom for handling hose.			Two 3/4-ton, electric, mast-and-boom derricks, each with 15-foot boom for handling hose.			None.		
RAILWAY CONNECTIONS	Surface track serves a 4-car capacity tank car loading rack at terminal in rear; connects with Seaboard Coast Line Railroad.			Surface tracks serve an 8-car capacity tank car loading rack at terminal in rear; connect with Seaboard Coast Line Railroad.			Surface track serves a 3-car capacity tank car loading rack at plant in rear; connects with Seaboard Coast Line Railroad.		
HIGHWAY CONNECTIONS	Via private road, gravel, various widths, from South Front Street, asphalt, 27 feet wide.			Via Wright Street, gravel and asphalt, 20 feet wide, from South Front Street, asphalt, 27 feet wide.			Via Queen Street, brick, 30 feet wide, from South Front Street, asphalt, 27 feet wide.		
WATER SUPPLY (Available to Vessels)	Through one 3-inch line with 2-inch hose connections.			Through one 3-inch (reduced to 2-inch) line with hose connections.			Through one 1 1/2-inch line.		
ELECTRIC CURRENT (Available to Vessels)	A.C., 110 volts, single-phase, 60-cycle, A.C., 220/440 volts, 3-phase, 60-cycle.			None.			A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle.		
FIRE PROTECTION (Other than City)	Hydrant, hose, foam cert, and hand extinguishers			Hose stations, hose with fog nozzles, chemical cart, hand extinguishers, and watchmen.			Hose and hand extinguishers.		
REMARKS	One 12-inch steam-treec, one 10-, and one 8-inch pipelines extend from wharf to 14 steel storage tanks in rear, total capacity 580,000 barrels.			Union Oil Co. of California; Union Chemicals Division of Union Oil Co. of California; Gulf Oil Corp; and Wright Chemical Co. use the terminal at rear and are served by: two 12-, two 10-, two 8-, four 6-, one 4-, and one 3-inch pipelines extend from upper wharf (Tanker Dock) to 29 steel storage tanks in rear, total capacity 910,800 barrels. One 12-, three 8-, two 6-, and one 2-inch pipelines extend from lower wharf (Barge Dock) and connect with pipelines serving upper wharf.			Molasses-processing plant at rear. One 12- (reduced to 10-inch), two 10-, and one 6-inch pipelines extend from wharf to 16 steel storage tanks in rear, total capacity 9,000,000 gallons.		
				In addition, ATC Petroleum, Inc. is served by one 10-, two 8-, one 6-, one 4-, and one 2-inch pipelines extending from wharf to 15 steel storage tanks, total capacity 615,000 barrels located adjacent to terminal on upper side					

PIERS, WHARVES, AND DOCKS

Left bank, Cape Fear River

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	16	Dock Code No. 235			17	Dock Code No.			18	Dock Code No.		
NAME	Wilmington Iron Works Wharf.				Batuyios Wharf.				Stone Towing Line, Lower Wharf.			
LOCATION ON WATERFRONT	Approximately 0.3 mile above Cape Fear Memorial Bridge, between Orange and Ann Streets.				Approximately 0.4 mile above Cape Fear Memorial Bridge, above foot of Orange Street.				Approximately 0.5 mile above Cape Fear Memorial Bridge, below foot of Dock Street.			
OWNED BY	Wilmington Iron Works, Inc.				James H. Batuyios.				Estate of R. R. Stone.			
OPERATED BY	do.				do.				Stone Towing Line.			
PURPOSE FOR WHICH USED	Mooring small vessels for repair.				Used for mooring company-owned boats.				Mooring company-owned tugboats.			
TYPE OF CONSTRUCTION	Timber pile, timber-decked wharf.				Timber pile, timber-decked wharf; timber piles in line with face with catwalk at rear.				Timber pile, timber-decked, marginal wharf; 5 timber mooring dolphins on lower side in line with face.			
DESCRIPTION	Face	Lower side	Upper side		Face	Lower side	Upper side		Face	Lower side	Upper side	
Dimensions (Feet)	264	20	18		18	20	20		100	20	20	
Depth Alongside at MLW Do.	9-14	-	-		14	-	-		20	-	-	
Usable Berthing Space Do.	264	-	-		100 w/piles.	-	-		200 w/dolphins	-	-	
Width of Apron Do.	9-12 & open.				Open.				Open.			
Height of Deck Above MLW Do.	5				5				6			
Load Capacity per Sq.Ft. (Lbs.)	-				-				-			
Lighted or Unlighted	Lighted.				Lighted.				Lighted.			
TRANSIT SHEDS	None.				None.				None.			
Number and Type of Construction												
Length and Width (Feet)												
Height Inside Do.												
Floor Area for Cargo (Sq.Ft.)												
Load Capacity per Sq.Ft. (Lbs.)												
Cargo Doors												
MECHANICAL HANDLING FACILITIES	Rental equipment available as required.				Two manually-operated mast-and-boom derricks, each with 10-foot boom.				None.			
RAILWAY CONNECTIONS	None.				None.				None.			
HIGHWAY CONNECTIONS	Via South Water Street, asphalt, 18 feet wide, from Orange Street, asphalt, 45 feet wide.				Via South Water Street, asphalt, 18 feet wide, from Dock Street, brick and asphalt, 35 feet wide.				Same as Ref. No. 17.			
WATER SUPPLY (Available to Vessels)	None.				Through one 3/4-inch hose line.				Through one 1-inch line.			
ELECTRIC CURRENT (Available to Vessels)	None.				None.				A.C., 110 volts, single-phase, 60-cycle.			
FIRE PROTECTION (Other than City)	Water line and hand extinguishers.				None.				Water line.			
REMARKS	Marine repair plant located in rear. Portions of wharf were in poor condition at time of survey.				-				-			

PIERS, WHARVES, AND DOCKS

Left bank, Cape Fear River

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	19	Dock Code No. -	20	Dock Code No. -	21	Dock Code No. -
NAME	Stone Towing Line, Upper Wharf.		Market Street Wharf.		U. S. Coast Guard Wharf.	
LOCATION ON WATERFRONT	Approximately 0.5 mile above Cape Fear Memorial Bridge, below foot of Market Street.		Approximately 0.6 mile above Cape Fear Memorial Bridge, foot of Market Street.		Approximately 0.7 mile above Cape Fear Memorial Bridge, between foot of Market and Chestnut Streets.	
OWNED BY	Estate of R. R. Stone.		City of Wilmington.		United States Government.	
OPERATED BY	Stone Towing Line.		do.		U. S. Coast Guard.	
PURPOSE FOR WHICH USED	Mooring company-owned tugboats.		Mooring City of Wilmington fireboat "Atlantic IV".		Mooring U. S. Coast Guard vessels.	
TYPE OF CONSTRUCTION	Part timber pile, timber-decked wharf; part timber pile, cantilevered concrete apron on upper side.		Concrete retaining wall with concrete-surfaced solid fill on concrete relieving platform supported by steel piles fronting steel sheet pile bulkhead with concrete-surfaced solid fill; fronted by timber pile and float fender system.		Concrete-capped, steel sheet pile bulkhead with part asphalt, part concrete-surfaced solid fill; fronted by timber float fender system.	
DESCRIPTION	Face		Face		Face	
Dimensions (Feet)	300		161		747	
Depth Alongside at MLW Do.	20		25		25	
Usable Berthing Space Do.	300		161		747	
Width of Apron Do.	Open and 3.		Open.		30	
Height of Deck Above MLW Do.	7		6.7		9.7 (See Remarks.)	
Load Capacity per Sq.Ft. (Lbs.)	-		300		200	
Lighted or Unlighted	Lighted.		Lighted.		Lighted.	
TRANSIT SHEDS	None.		None.		None.	
Number and Type of Construction						
Length and Width (Feet)						
Height Inside Do.						
Floor Area for Cargo (Sq.Ft.)						
Load Capacity per Sq.Ft. (Lbs.)						
Cargo Doors						
MECHANICAL HANDLING FACILITIES	None.		None.		None.	
RAILWAY CONNECTIONS	None.		None.		None.	
HIGHWAY CONNECTIONS	Via South Water Street, asphalt, 15 feet wide, from Market Street, asphalt, 69 feet wide.		Via Market Street, asphalt, 69 feet wide.		Via North Water Street, asphalt, 42 feet wide, from Market Street, asphalt, 69 feet wide.	
WATER SUPPLY (Available to Vessels)	Through one 1½-inch line.		Through one 2-inch line.		Same as Ref. No. 20.	
ELECTRIC CURRENT (Available to Vessels)	None.		D.C., 125/250 volts.		A.C., 120/240 volts, single-phase, 60-cycle.	
FIRE PROTECTION (Other than City)	Hand extinguishers		Hydrant, hose, and hand extinguishers.		Hydrant in rear.	
REMARKS	Dispatch office located in building at rear		Face of wharf is contiguous with Ref. No. 21.		Face of wharf is contiguous with Ref. No. 20. Apron is elevated with access from either end via concrete ramps.	

PIERS, WHARVES, AND DOCKS

Left bank, Northeast Cape Fear River

Corps of Engineers Port Code No. 11834

REFERENCE NUMBER ON MAP	22 Dock Code No. -			23 Dock Code No. 305			24 Dock Code No. -		
NAME	Cape Fear Technical Institute Wharf.			Seaboard Coast Line Railroad, Diesel Fuel Wharf.			B. F. Diamond Construction Co. Stone Yard.		
LOCATION ON WATERFRONT	Approximately 0.9 mile above Cape Fear Memorial Bridge, between Walnut and Red Cross Streets.			Approximately 1.0 mile above Cape Fear Memorial Bridge, below foot of Hanover Street extended.			Approximately 1.0 mile above Cape Fear Memorial Bridge above foot of Hanover Street extended.		
OWNED BY	Cape Fear Technical Institute.			Seaboard Coast Line Railroad Co.			Seaboard Coast Line Railroad Co. and Almont Shipping Co., Inc.		
OPERATED BY	do.			Seaboard Coast Line Railroad Co. and Trans Carolina Terminal Corp.			B. F. Diamond Construction Co., Inc.		
PURPOSE FOR WHICH USED	Mooring oceanographic training vessels.			Receipt of diesel fuel and liquid fertilizer.			Shipment of stone by barge.		
TYPE OF CONSTRUCTION	Concrete pile, concrete-decked, offshore wharf with 228- by 10-foot, timber pile, timber-decked approach to lower side; fronted by timber fender system; 2 concrete-capped, steel mooring dolphins in line with face. (See Remarks.)			Timber pile, timber-decked, offshore wharf with 141- by 10-foot timber walkway and pipeline approach; 2 cylindrical, concrete-surfaced, solid-filled, steel sheet pile breasting dolphins in line with face.			Natural bank on lower side of dredged slip.		
DESCRIPTION	Face	Lower side	Upper side	Face	Lower side	Upper side	Face		
Dimensions (Feet)	233	258	15	198	10	10	400		
Depth Alongside at MLW Do.	20	-	-	29	-	-	12-20		
Usable Berthing Space Do.	322 w/dolphins	-	-	370 w/dolphins	-	-	300 (See Remarks)		
Width of Apron Do.	30, 15, and open.			Open.			Open.		
Height of Deck Above MLW Do.	10			11			10		
Load Capacity per Sq.Ft. (Lbs.)	-			-			-		
Lighted or Unlighted	Lighted.			Lighted.			Unlighted.		
TRANSIT SHEDS	None.			None.			None.		
Number and Type of Construction									
Length and Width (Feet)									
Height Inside Do.									
Floor Area for Cargo (Sq.Ft.)									
Load Capacity per Sq.Ft. (Lbs.)									
Cargo Doors									
MECHANICAL HANDLING FACILITIES	One 3-ton diesel and one 2-ton liquified petroleum gas fork lift trucks.			One hinged, pneumatically-operated, steel hose handling frame on wharf; frame supports three 8-inch flexible hose connections.			One 45-ton diesel crawler crane with 65-foot boom equipped with stone grab; one 10-ton, diesel mobile crane with 30-foot telescopic boom; and one 1-cubic yard diesel mobile front end loader.		
RAILWAY CONNECTIONS	None.			Seaboard Coast Line Railroad: Two surface tracks serve tank car loading rack, total capacity 20 cars.			Two surface tracks serving yard at rear connect with Seaboard Coast Line Railroad.		
HIGHWAY CONNECTIONS	Via private driveway, asphalt, 24 and 30 feet wide, from North Water Street, asphalt, 42 feet wide.			Via gravel road, 10 feet wide, from Nutt Street, asphalt, 37 feet wide, and from Red Cross Street, asphalt, 50 feet wide.			Same as Ref. No. 23.		
WATER SUPPLY (Available to Vessels)	Through one 2-inch line.			None.			None.		
ELECTRIC CURRENT (Available to Vessels)	A.C., 440 volts, 3-phase, 60-cycle.			None.			None.		
FIRE PROTECTION (Other than City)	Hose and hand extinguishers.			Hydrant and hand extinguishers.			None.		
REMARKS	One 3½-inch pipeline extends to face from tank truck connection at inner end of approach for fueling vessels. Cape Fear Technical Institute located in rear on opposite side of North Water Street. Additional 135 feet of mooring for small craft along lower side of permanently moored barge above upper side. Barge is used for shops and classrooms.			Seaboard Coast Line Railroad: One 12-inch pipeline extends from wharf to 2 steel, spheroid-shaped storage tanks located approximately 0.5 mile northeast between Cowan and Harnett Streets, total capacity 120,000 barrels. Trans Carolina Terminal Corp.: One 8-inch pipeline extends from wharf to one 23,810-barrel liquid fertilizer tank at rear.			Additional 400 feet of berthing on upper side of slip along lower side of Almont Shipping Co. Pier A, Ref. No. 25.		

PIERS, WHARVES, AND DOCKS

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	Dock Code No. 300			26	Dock Code No. 300			27	Dock Code No. 300		
NAME	Almont Shipping Co., Pier A.			Almont Shipping Co., South Berth.				Almont Shipping Co., North Berth.			
LOCATION ON WATERFRONT	Approximately 1.1 miles above Cape Fear Memorial Bridge, between foot of Hanover and Brunswick Streets extended.			Left bank of Northeast Cape Fear River, between foot of Brunswick and Bladen Streets extended.				Below foot of Harnett Street extended.			
OWNED BY	Seacor, Inc.			Seacor, Inc.				Seacor, Inc.			
OPERATED BY	Almont Shipping Co., Inc.			Almont Shipping Co., Inc.				Almont Shipping Co., Inc.			
PURPOSE FOR WHICH USED	Mooring vessels and barges. (See Remarks.)			Mooring vessels and barges.				Receipt of bulk fertilizer, iron, and chrome ores.			
TYPE OF CONSTRUCTION	Outer portion and upper side: Timber pile, timber deck; 230-foot inner portion of lower side: Timber bulk-head with solid fill.			Timber pile, timber-decked pier.				Concrete pile, concrete-decked wharf with 2 concrete breasting dolphins in line with face on upper side, all fronted by timber and rubber fender system; one 65-, and one 35- by 20-foot approach.			
DESCRIPTION	Face	Lower side	Upper side	Face	Lower side			Face	Upper side		
Dimensions (Feet)	110	400	450	350	410			523	60		
Depth Alongside at MLW Do.	35	12	20	35	20-35			35	-		
Usable Berthing Space Do.	110	400	250, barges.	350	410			600 w/dolphins	-		
Width of Apron Do.	20-80	Open-0	26	25-60	26			Open.			
Height of Deck Above MLW Do.	10			10				10			
Load Capacity per Sq.Ft. (Lbs.)	500			1,100				-			
Lighted or Unlighted	Lighted.			Lighted.				Lighted.			
TRANSIT SHEDS	None. (See Remarks.)			None. (See Remarks.)				None.			
Number and Type of Construction											
Length and Width (Feet)											
Height Inside Do.											
Floor Area for Cargo (Sq.Ft.)											
Load Capacity per Sq.Ft. (Lbs.)											
Cargo Doors											
MECHANICAL HANDLING FACILITIES	Two 4-, one 3-, one 2½-, and eight 1-cubic yard, diesel, mobile front end loaders available for use at all company's piers and warehouses, and 5 diesel, crawler bulldozers. In addition, one 50-ton, diesel locomotive for switching rail cars; and 4 electric trimming machines are available for stockpiling in warehouses and for use in loading rail cars, capacity 100 tons per hour, each.			Use of mobile equipment described under Ref. No. 28.				One electric, traveling, full portal gantry crane with hinged-cantilevered boom having 60-foot outboard reach, equipped with 8½-, 4½-, or 4-cubic yard clamshell bucket, and 25-ton receiving hopper; unloading rate approximately 450 tons of ore per hour. Hopper served by reversible, 42-inch electric belt conveyor system extending along wharf. Conveyor system extends from upper side to 3 fixed and 2 portable, radial electric stackers serving open storage area at rear operated by (Continued under Remarks)			
RAILWAY CONNECTIONS	Seaboard Coast Line Railroad: One 300-foot surface track along upper side of slip, and one 360-foot, platform-level track along lower side of Warehouse A. (See Remarks.)			Seaboard Coast Line Railroad: One 375-foot depressed track on lower apron; 2 depressed tracks between warehouses; and one 405-foot depressed track on upper apron. All tracks are flanked by 8-foot wide timber aprons.				None.			
HIGHWAY CONNECTIONS	Via Brunswick Street, asphalt, 30 feet wide, from Nutt Street, asphalt, 37 feet wide.			Same as Ref. No. 25.				Same as Ref. No. 25.			
WATER SUPPLY (Available to Vessels)	Through one 2-inch line			Through one 2-inch line.				Through one 4-inch line.			
ELECTRIC CURRENT (Available to Vessels)	A.C., 110/220 volts, single-phase, 60-cycle, A.C., 220 volts, 3-phase, 60-cycle			Same as Ref. No. 25.				None.			
FIRE PROTECTION (Other than City)	Hydrants, hose reels, hand extinguishers, water barrels and pails, and water.			Same as Ref. No. 25.				Waterline, hose, and hand extinguishers.			
REMARKS	Vessels moor across face extending to face of adjacent Ref No 26; barges moor along lower side and outer portion of upper side. Warehouse A (S.W. Ref No 11) located on pier, and Warehouses D, E, and F (S.W. Ref Nos 14, 15, and 16) located at rear of head of slip, are used for storing fertilizer received via conveyor belt system extending from Almont Shipping Co. North Berth (Ref No 27). At time of survey, B F Diamond Construction Co., Inc. was using lower side of slip for mooring barges.			Face of wharf is contiguous with Ref. No. 27. Warehouses B and C (S.W. Ref. Nos. 12 and 13) on pier are used for storing fertilizer materials and have loading chutes at sides and at rear for shipment by rail and truck.				Stevedores Inc; and from lower side to an inter-connecting conveyor system serving warehouses located on and at rear of Ref. Nos. 25 and 26. Open storage areas at rear have capacity for approximately 200,000 tons of iron ore; 65,000 tons of chrome ore. Face of wharf is contiguous with Ref. No. 26.			

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	28 Dock Code No. 300			29 Dock Code No. -			30 Dock Code No. 770		
NAME	Stevedores, Inc. Barge Berth.			Dixie Crystals Liquid Sugars Depot Dock.			Corbett Package Co. Landing.		
LOCATION ON WATERFRONT	Above foot of Harnett Street extended.			Left bank of Northeast Cape Fear River, above Hilton Bridge.			Right bank of Smiths Creek, above Smiths Creek Bridge.		
OWNED BY	Sescor, Inc.			Savannah Sugar Refining Corp.			Corbett Package Co.		
OPERATED BY	Stevedores, Inc.			do.			do.		
PURPOSE FOR WHICH USED	Shipment of iron ore.			Receipt of liquid sugar by barge.			Receipt of logs by barge.		
TYPE OF CONSTRUCTION	Timber pile, timber-decked pier; 7 timber and 1 concrete breasting dolphins in line with face. (See Remarks.)			Timber pile, timber-decked, offshore wharf with 170- by 10-foot timber walkway and pipeline trestle approach; 2 timber pile mooring dolphins on upper side and one on lower side, all in line with face.			Natural bank.		
DESCRIPTION	Face	Lower side	Upper side	Face	Lower side	Upper side	Natural bank		
Dimensions (Feet)	15	68	68	27	14	14	200		
Depth Alongside at MLW Do.	20	-	-	14-35	-	-	8-15		
Usable Berthing Space Do.	296 w/dolphins	-	-	200 w/dolphins	-	-	200		
Width of Apron Do.	-			Open.			Open.		
Height of Deck Above MLW Do.	10			9			3, top of bank.		
Load Capacity per Sq.Ft. (Lbs.)	-			-			-		
Lighted or Unlighted	Lighted.			Lighted.			Unlighted.		
TRANSIT SHEDS	None.			None.			None.		
Number and Type of Construction									
Length and width (Feet)									
Height Inside Do.									
Floor Area for Cargo (Sq.Ft.)									
Load Capacity per Sq.Ft. (Lbs.)									
Cargo Doors									
MECHANICAL HANDLING FACILITIES	One 30-inch diameter cantilevered barge loading chute equipped with trimmer, served by 42-inch electric belt conveyor system extending from open storage area at rear, loading rate approximately 400 tons of ore per hour. In addition, one 6-, one 5-, and one 4½-cubic yard, diesel, mobile front end loaders, and 6 diesel, crawler bulldozers.			One hand-operated hoist for handling hose.			Two 7½-ton fork lift trucks for handling logs at open storage area in rear.		
RAILWAY CONNECTIONS	None.			One 300-foot surface track serves terminal in rear; connects with Seaboard Coast Line Railroad.			Two surface tracks serve plant in rear, total length 2,250 feet; connect with Seaboard Coast Line Railroad.		
HIGHWAY CONNECTIONS	Via Brunswick Street, asphalt, 30 feet wide, from Nutt Street, asphalt, 37 feet wide.			Via private road, asphalt, 20 feet wide, from North 6th Street, asphalt, 24 feet wide.			Via private road, gravel, various widths, from Castle Hayne Road (U.S. Highway 117), asphalt, 32 feet wide.		
WATER SUPPLY (Available to Vessels)	None.			Through one 1-inch line.			None.		
ELECTRIC CURRENT (Available to Vessels)	None.			A.C., 110 volts, single-phase, 60-cycle; A.C., 440 volts, 3-phase, 60-cycle.			None.		
FIRE PROTECTION (Other than City)	None.			Waterline, hose, and hand extinguishers.			None.		
REMARKS	Lower concrete breasting dolphin, also serves as mooring dolphin for Ref. No. 27. Inner end of pier 10 feet wide.			One 8-inch pipeline extends from wharf to 14 steel storage tanks, total capacity 530,000 gallons; two of these tanks are insulated and heated, have a capacity for 5,000 gallons each, and are used for loading tank trucks at a rate of 395 gallons per minute.			Logs are unloaded by use of cranes on barges. Basket- and box-manufacturing plant and open storage area for logs located in rear. Open storage area has capacity for approximately 200,000 FBM of logs.		

PIERS, WHARVES, AND DOCKS

Corps of Engineers Port Code No. 11834

REFERENCE NUMBER ON MAP	31	Dock Code No. 985			32	Dock Code No. 448			33	Dock Code No. -		
NAME	Hercofina Wharf.				W. R. Grace and Co. Wharf.			Northeast Chemical Co. Pier.				
LOCATION ON WATERFRONT	Right bank of Northeast Cape Fear River, approximately 5.9 miles above Hilton Railroad Bridge.				Right bank of Northeast Cape Fear River, approximately 1.2 miles above Hilton Railroad Bridge.			Right bank of Northeast Cape Fear River, approximately 0.9 mile above Hilton Railroad Bridge.				
OWNED BY	Hercofina, Inc.				W. R. Grace and Co.			Northeast Chemical Co., Inc.				
OPERATED BY	do.				do.			do.				
PURPOSE FOR WHICH USED	Receipt of chemicals and fuel oil for plant consumption.				Receipt of anhydrous ammonia by vessel; shipment of liquid fertilizer by barge.			Receipt and shipment of bulk liquid commodities including sulfuric acid.				
TYPE OF CONSTRUCTION	Timber pile, timber-decked, offshore wharf with 9 timber breasting dolphins in line with face; 150- by 10-foot timber pipeline trestle and walkway approach.				Timber pile, timber-decked, offshore wharf with 366- by 14-foot approach; fronted by timber fender system; 2 rectangular-shaped, steel pile, concrete-capped and one timber breasting dolphins in line with face.			Timber pile, timber-decked pier with 4 timber breasting dolphins in line with face.				
DESCRIPTION	Face	Upper side	Lower side	Face	Lower side	Upper side	Face	Upper side	Lower side			
Dimensions (Feet)	70	14	14	45	30	30	8	200	200			
Depth Alongside at MLW Do.	11	-	-	26	-	-	24	-	-			
Usable Berthing Space Do.	350 w/dolphins	-	-	190 w/dolphins	-	-	220 w/dolphins	-	-			
Width of Apron Do.	Open.			Open.			Open.					
Height of Deck Above MLW Do.	7			12			10					
Load Capacity per Sq.Ft. (Lbs.)	-			100			-					
Lighted or Unlighted	Lighted.			Lighted.			Lighted.					
TRANSIT SHEDS	None.			None.			None.					
Number and Type of Construction												
Length and Width (Feet)												
Height Inside Do.												
Floor Area for Cargo (Sq.Ft.)												
Load Capacity per Sq.Ft. (Lbs.)												
Cargo Doors												
MECHANICAL HANDLING FACILITIES	Steel frame with 2 manually-operated hose handling hoists.			-			None.					
RAILWAY CONNECTIONS	Tracks serving plant at rear connect with Seaboard Coast Line Railroad.			Tracks serving plant in rear connects with Seaboard Coast Line Railroad.			Two surface tracks serving plant at rear connect with Seaboard Coast Line Railroad.					
HIGHWAY CONNECTIONS	Via private roadway, asphalt, 24 feet wide, from U.S. Highway 421, asphalt, dual lane, each lane 24 feet wide			Same as Ref. No. 31.			Same as Ref. No. 31.					
WATER SUPPLY (Available to Vessels)	None			Through one 4-inch line.			Through one 2-inch line.					
ELECTRIC CURRENT (Available to Vessels)	A.C., 240 volts, 3-phase, 60-cycle.			A.C., 110 volts, single-phase, 60-cycle.			A.C., 440 volts, 3-phase, 60-cycle.					
FIRE PROTECTION (Other than City)	Plant fire department, 6-inch waterline, hydrants, monitors and foam system			Waterline, hand extinguishers, and watchmen.			Hand extinguishers.					
REMARKS	One 8-inch pipeline extends from wharf to 2 fuel oil storage tanks at rear, total capacity 95,250 barrels; and two 8-inch pipelines extend from wharf to 2 paraxylene storage tanks, total capacity 142,860 barrels, and to one methyl alcohol storage tank, capacity 73,800 barrels One 4-inch steam line serves wharf			One 8-inch pipeline extends from wharf to one 20,000-ton capacity, anhydrous ammonia storage tank; and one 4-inch pipeline extends to wharf from 7 liquid fertilizer storage tanks, total capacity 4,000,000 gallons Wharf is served by one 1½-inch compressed air line			Three 6-inch pipelines extend from pier to one 2,500-ton sulfuric acid tank, and ten liquid commodity storage tanks, total capacity 300,000 gallons.					

PIERS, WHARVES, AND DOCKS

Right bank, Northeast Cape Fear River

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	34	Dock Code No. 462			35	Dock Code No. -			36	Dock Code No. 505		
NAME	Horton Iron & Metal Co. Pier.			Rumsey Marine and Drydock Slip.			Ideal Cement Co. Wharf.					
LOCATION ON WATERFRONT	Right bank of Northeast Cape Fear River, approximately 0.6 mile above Hilton Railroad Bridge.			Approximately 0.4 mile above Hilton Bridge.			Approximately 0.2 mile below Hilton Bridge.					
OWNED BY	Horton Iron & Metal Co., Inc.			A. S. Wikstrom, Inc.			Ideal Cement Co., Division of Ideal-Basic Industries, Inc.					
OPERATED BY	do.			Rumsey Marine and Drydock.			Not operated.					
PURPOSE FOR WHICH USED	Receipt and shipment of scrap metal; mooring vessels for shipbreaking.			Mooring small vessels and barges for repair; mooring floating drydock and contractor's floating equipment; mooring harbor-bunkering barge.			Not used.					
TYPE OF CONSTRUCTION	Pier formed by part steel sheet pile and part timber bulkhead with part concrete-surfaced solid fill. (See Remarks.)			Dredged slip with natural banks; row of timber pile mooring dolphins along upper side and 3 cylindrical, concrete-surfaced, solid-filled breasting dolphins at outer end of upper side.			Concrete pile, concrete-decked, offshore wharf with 150- by 28-foot walkway and pipeline trestle approach; 4 timber mooring dolphins in line with face; timber walkways extend from sides of wharf to dolphins.					
DESCRIPTION												
	Face	Lower side	Upper side	Head of slip	Lower side	Upper side	Face	Rear of face	Lower and Upper sides			
Dimensions (Feet)	265	750	750	200	700	600	358	290	22, each.			
Depth Alongside at MLW Do.	19	0-19	0-19	16	16	16	32	20	-			
Usable Berthing Space Do.	265	400	400	200	700	600	678 w/dolphins	490 w/dolphins	-			
Width of Apron Do.	Open.			Open.			Open.					
Height of Deck Above MLW Do.	10			10			8					
Load Capacity per Sq.Ft. (Lbs.)	100			-			250					
Lighted or Unlighted	Unlighted.			Lighted.			Lighted.					
TRANSIT SHEDS	None.			None.			None.					
Number and Type of Construction												
Length and Width (Feet)												
Height Inside Do.												
Floor Area for Cargo (Sq.Ft.)												
Load Capacity per Sq.Ft. (Lbs.)												
Cargo Doors												
MECHANICAL HANDLING FACILITIES	Two 50-ton, diesel, locomotive cranes, each with 75-foot boom; one 40-, one 30-, and one 15-ton, diesel, crawler cranes, each with 55-foot boom; one 30- and one 15-ton, diesel, mobile cranes, each with 55-foot boom, and one 5-ton, diesel, mobile crane with 25-foot boom.			One 15-ton, diesel-electric, traveling, revolving, full-portal, gantry crane with 100-foot boom, travels on rails along upper side of slip.			One 3½-ton, electric, stiff-leg derrick with 70-foot boom for handling hose.					
RAILWAY CONNECTIONS	Five surface tracks on open pier; connect with Seaboard Coast Line Railroad.			Seaboard Coast Line Railroad tracks in rear of property.			None.					
HIGHWAY CONNECTIONS	Via private roadways, gravel, various widths, from U.S. Highway 421, asphalt, dual lane, each lane 24 feet wide.			Same as Ref. No. 34.			Via private road, soil cement, 20 feet wide, from 20-foot wide asphalt road parallel to and connecting with U.S. Highway 421, asphalt, 24 feet wide.					
WATER SUPPLY (Available to Vessels)	Through one 4-inch line.			Through one 2-inch line.			Through one 1½-inch line.					
ELECTRIC CURRENT (Available to Vessels)	A.C., 110 volts, single-phase, 60-cycle.			A.C., 110 volts, single-phase, 60-cycle; A.C., 220/440 volts, 3-phase, 60-cycle.			A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle.					
FIRE PROTECTION (Other than City)	Three 1,000-gallon-per-minute, diesel, portable fire pumps, hose, hand extinguishers, and watchmen.			Hand extinguishers, watchmen, and pump on floating drydock.			Waterline and hose.					
REMARKS	600- by 70-foot slips formed with natural bank on each side of pier are used for shipbreaking. At time of survey mooring was restricted to outer ends of pier along steel sheet pile bulkhead.			One 1,000-ton floating drydock moored along 3 breasting dolphins at outer end of upper side of slip in 20-foot depth at mean low water. Additional berthing available in a 200- by 80-foot dredged slip located 400 feet above main slip.			Six 12-inch air-slide conveyor pipelines (4 for receipt and 2 for shipment) extend from wharf to 4 bulk cement storage silos with one interstice storage bin in rear, total storage capacity 108,000 barrels.					

PIERS, WHARVES, AND DOCKS

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	37 Dock Code No. 645			38 Dock Code No. -			39 Dock Code No. -		
NAME	Wilmington Shipyard Piers.			Atkinson Dredging Co. Mooring.			Bordeaux Salvage and Construction Co.		
LOCATION ON WATERFRONT	Approximately 0.1 mile below Northeast River Bridge.			Right bank of Northeast Cape Fear River, approximately 0.4 mile below highway bridge (Parsley Street).			Above junction with Cape Fear River.		
OWNED BY	Wilmington Shipyard, Inc.			Atkinson Dredging Co.			Bordeaux Salvage and Construction Co.		
OPERATED BY	do.			do.			do.		
PURPOSE FOR WHICH USED	Mooring small vessels and barges for repair; mooring recreational craft and harbor-bunkering barges.			Mooring company-owned floating equipment.			Mooring company-owned floating equipment; handling construction material and supplies to and from barges.		
TYPE OF CONSTRUCTION	Three parallel, timber pile, timber-decked piers; 2 piers extend from face of a 540-foot timber bulkhead with solid fill, and one from natural bank; 8 timber mooring dolphins above upper pier in line with face.			Offshore row of 19 timber mooring dolphins spaced approximately 30 feet apart.			L-shaped natural bank fronted by timber mooring piles.		
DESCRIPTION	Lower pier	Middle pier	Upper pier	Mooring dolphins			Face	Upper side	
Dimensions (Feet)	125 by 12	220 by 20	220 by 12	520			200	100	
Depth Alongside at MLW Do.	15	14	6-12	8			20	4-20	
Usable Berthing Space Do.	250	220 and 130	(See Remarks)	520			200 w/piles.	100 w/piles.	
Width of Apron Do.	Open.	Open.	Open.	-			Open.		
Height of Deck Above MLW Do.	7	7	7	-			5		
Load Capacity per Sq.Ft. (Lbs.)	400	400	400	-			-		
Lighted or Unlighted	Lighted.			Partly lighted.			Unlighted.		
TRANSIT SHEDS	None.			None.			None.		
Number and Type of Construction									
Length and Width (Feet)									
Height Inside Do.									
Floor Area for Cargo (Sq.Ft.)									
Load Capacity per Sq.Ft. (Lbs.)									
Cargo Doors									
MECHANICAL HANDLING FACILITIES	Two 12½-ton, diesel, crawler cranes, one with 50- and one with 55-foot boom.			Use of company-owned cranes.			Two 50-ton, diesel crawler cranes, one with 80- and one with 65-foot boom; one 25-ton gasoline mobile crane with 60-foot boom; and one 45-ton steam-operated, floating derrick with 100-foot boom.		
RAILWAY CONNECTIONS	None.			None.			None.		
HIGHWAY CONNECTIONS	Via private road, gravel, various widths, from State Highway 133, asphalt, 24 feet wide.			Via private road, gravel, various widths, from U.S. Highway 421, asphalt, 24 feet wide.			Same as Ref. No. 38.		
WATER SUPPLY (Available to Vessels)	Through one 1½-inch line on each pier.			None.			None.		
ELECTRIC CURRENT (Available to Vessels)	A.C., 110/220 volts, single-phase, 60-cycle; A.C., 220/440 volts, 3-phase, 60 cycle, D.C., 110/220 volts.			A.C., 110 volts, single-phase, 60-cycle.			None.		
FIRE PROTECTION (Other than City)	One 3-inch fire line with 2 pumps, hose on each pier, and hand extinguishers.			None.			None.		
REMARKS	One 1,600-ton marine railway at head of slip located adjacent to inner end of lower pier, and one 100-ton, vertical, bust lift located adjacent to inner end of upper side of middle pier. Hemover Towing, Inc., and O.E. DuMont, Inc. use piers as base for harbor mooring barges. Berthing at upper pier consists of 220 feet along lower side, and approximately 240 feet with dolphins along face.			-			Additional 100 + 100 feet of berthing along 2 timber mooring piles fronting natural bank on upper side.		

PIERS, WHARVES, AND DOCKS

27

Corps of Engineers Port Code No. 11823

REFERENCE NUMBER ON MAP	40 Dock Code No. 831			41 Dock Code No. 685			42 Dock Code No. -		
NAME	Chemphalt of Wilmington Pier			Corps of Engineers, Boat Yard Wharf.			Atlantic Culf and Pacific Co. Wharf.		
LOCATION ON WATERFRONT	Left bank Cape Fear River approximately 1,500 feet above junction with Northeast Cape Fear River.			Right bank of Cape Fear River, below Cape Fear Memorial Bridge.			Right bank of Cape Fear River, approximately 0.1 mile below Cape Fear Memorial Bridge.		
OWNED BY	Chemphalt of Wilmington, Inc.			United States Government.			Atlantic Culf and Pacific Co.		
OPERATED BY	do.			Corps of Engineers, U.S. Army.			do.		
PURPOSE FOR WHICH USED	Receipt and shipment of methanol.			Mooring government-owned floating equipment.			Mooring company-owned floating equipment.		
TYPE OF CONSTRUCTION	Timber pile, timber-decked pier fronted by 3 timber breasting dolphins; 3 timber mooring dolphins at rear.			Lower 52-foot portion of face: Steel sheet pile bulkhead with solid fill; upper portion of face: 176- by 14-foot wide, timber pile, timber-decked wharf; parallel timber pile, timber-decked pier at rear extends from timber platform fronting steel sheet pile bulkhead forming L-shaped basin at rear.			Face: Concrete bulkhead with solid fill; lower side: Timber bulkhead with solid fill.		
DESCRIPTION	Face	Upper side	Lower side	Face	Rear of face	Pier	Face	Lower side	
Dimensions (Feet)	20	45	45	227	140	104 by 5	250	150	
Depth Alongside at MLW Do.	20	-	-	12-16	9	4-12	12	4-8	
Usable Berthing Space Do.	150 w/dolphins	-	-	227	140	180, total	250	150	
Width of Apron Do.	Open.			Open.	Open.	Open.	Open.		
Height of Deck Above MLW Do.	5			5-7.5			5		
Load Capacity per Sq.Ft. (Lbs.)	-			350			-		
Lighted or Unlighted	Lighted.			Lighted.			Unlighted.		
TRANSIT SHEDS	None.			None.			None.		
Number and Type of Construction									
Length and Width (Feet)									
Height Inside Do.									
Floor Area for Cargo (Sq.Ft.)									
Load Capacity per Sq.Ft. (Lbs.)									
Cargo Doors									
MECHANICAL HANDLING FACILITIES	Steel frame with manually-operated hoist for handling hose.			One 5-ton, gasoline, mobile crane with 25-foot boom.			Use of company-owned cranes.		
RAILWAY CONNECTIONS	None.			None.			None.		
HIGHWAY CONNECTIONS	Via driveway, gravel, 24 feet wide, from U.S. Highway 421, asphalt, 24 feet wide.			Via road, asphalt, 20 feet wide, from Old Ferry Road.			Same as Ref. No. 41.		
WATER SUPPLY (Available to Vessels)	None.			Through one 1½-inch line.			Same as Ref. No. 41.		
ELECTRIC CURRENT (Available to Vessels)	A.C., 110 volts, single-phase, 60-cycle.			A.C., 110 volts, single-phase, 60-cycle; A.C., 240 volts, 3-phase, 60-cycle.			A.C., 110 volts, single-phase, 60-cycle; A.C., 220/440 volts, 3-phase, 60-cycle.		
FIRE PROTECTION (Other than City)	Hand extinguishers.			Hose stations, 4-inch fire main, and hand extinguishers.			Hand extinguishers.		
REMARKS	One 8-inch pipeline extends from wharf to 2 steel storage tanks at rear, total capacity 80,000 barrels.			One 40- by 15-foot wide, concrete, small-boat launching ramp located at inner end of basin.			Open area in rear used for storing construction supplies and equipment.		

PIERS, WHARVES, AND DOCKS

Corps of Engineers Port Code No. 11832

REFERENCE NUMBER ON MAP	43	Dock Code No. 685	44	Dock Code No. 277	Dock Code No.
NAME	International Paper Co. Wharf.		Cape Fear Towing Co. Wharf.		
LOCATION ON WATERFRONT	Right bank of Cape Fear River, approximately 0.2 mile below Cape Fear Memorial Bridge.		Right bank of Cape Fear River, approximately 0.3 mile below Cape Fear Memorial Bridge.		
OWNED BY	International Paper Co.		Cape Fear Towing Co., Inc.		
OPERATED BY	do.		do.		
PURPOSE FOR WHICH USED	Shipment of pulpwood by barge.		Mooring company-owned tugboats.		
TYPE OF CONSTRUCTION	Lower 200-foot portion of face: Timber bulkhead with solid fill; remaining 595-foot upper portion of face: Steel sheet pile bulkhead with solid fill; upper side: Part steel sheet pile and part timber bulkhead with solid fill.		Timber pile, timber-decked, offshore wharf, with two 85- by 16-foot timber approaches; 4 timber mooring dolphins in line with face.		
DESCRIPTION	Face	Upper side	Face	Upper side	Lower side
Dimensions (Feet)	595+200	240	350	16	16
Depth Alongside at MLW Do.	9	0-9	15	-	-
Usable Berthing Space Do.	595+200	240	450 w/dolphins	-	-
Width of Apron Do.	Open.		Open.		
Height of Deck Above MLW Do.	10		8		
Load Capacity per Sq.Ft. (Lbs.)	Unlimited.		-		
Lighted or Unlighted	Partly lighted.		Lighted.		
TRANSIT SHEDS	None.		None.		
Number and Type of Construction					
Length and Width (Feet)					
Height Inside Do.					
Floor Area for Cargo (Sq.Ft.)					
Load Capacity per Sq.Ft. (Lbs.)					
Cargo Doors					
MECHANICAL HANDLING FACILITIES	One 45-ton, electric, traveling, full-portal, gantry crane with 110-foot boom having 90-foot outboard reach, crane travels 500 feet along rear of upper portion of wharf face. One elevated, hinged-conveyor boom on lower end of upper portion of wharf face is used for topping logs on barges at rate of 35 tons per hour, served by belt conveyor extending from sawmill.		None.		
RAILWAY CONNECTIONS	None.		None.		
HIGHWAY CONNECTIONS	Via road, asphalt, 20 feet wide.		Same as Ref. No. 43.		
WATER SUPPLY (Available to Vessels)	Through one 2-inch line with 3/4-inch hose connection.		Through one 1-inch line.		
ELECTRIC CURRENT (Available to Vessels)	A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle.		A.C., 220 volts, 3-phase, 60-cycle.		
FIRE PROTECTION (Other than City)	Pump with capacity of 50 gallons per minute, hose, and hand extinguishers.		Hand extinguishers.		
REMARKS	Gantry crane loads logs into barges at average rate of 165 tons per hour; double row of 5 barges can be loaded at wharf without shifting barges; one 30-ton, electric, fork lift truck equipped with clamps unloads logs from trucks to open storage area and from storage area to gantry crane and to a traveling crane at sawmill. Open storage area totals 4 acres with capacity for 4,000 cords of pulpwood.		Tug dispatch office and shops at rear.		

OIL HANDLING AND BUNKERING

Eleven of the waterfront facilities described in this report are equipped to receive and/or ship petroleum products, petrochemicals, and asphalt. Two of the facilities provide bunkering services to vessels; one oil company can bunker tankers while berthed at its facility; and three facilities are equipped to fuel towboats and other types of small vessels.

Large oceangoing vessels are usually bunkered at berth by tank barges based at the port. These barges, together with their capacities and sizes, are listed separately in the table of Floating Equipment on page 42.

The tabulation on page 32 gives information on the facilities equipped to handle petroleum products; details are given in the table of Piers, Wharves, and Docks, beginning on page 14 under the reference numbers indicated. Tank storage at recreational craft service stations is not included.

OPEN STORAGE

In addition to the long- and short-term, covered storage facilities for waterborne cargo, the North Carolina State Ports Authority has 30.8 acres of open storage area available to the public for storing commodities not requiring protection from the weather, and additional storage for 1,500 containers on chassis on and in rear of the North Carolina State Ports Authority general cargo wharves (P.W.D. Ref. Nos. 7, 8, and 9). A tabulation of these storage areas is provided in the Summary of General Cargo Facilities on page 13.

Other operators with waterfront facilities at the port of Wilmington have open storage areas to meet their own operational requirements; these areas usually are not available for public use.

WAREHOUSES

In the port area, 5 companies and the North Carolina State Ports Authority operate warehouses having a total of 1,212,300 square feet of dry storage space and 250,000 cubic feet of cold storage space. Of this total, 569,900 square

feet of space is provided by the North Carolina State Ports Authority at its general cargo terminal. A fumigation plant with 2 vacuum chambers is adjacent to the Ports Authority's Warehouse No. 3 (S.W. Ref. No. 8). Two of the 5 companies operate 9 warehouse buildings for storing bulk fertilizer materials; the buildings have a total storage capacity for 182,000 tons.

All but 2 of the warehouses have railroad connections, and each is accessible to arterial highways. Diversified handling equipment is maintained by the operators, and special services are provided, including packing and crating, forwarding, pool car distribution, carloading, weighing, bagging, fumigation, stamping, and marking.

The summary on page 33 lists the operators and gives the storage capacity of the dry and cold storage facilities, which are more fully described under individual reference numbers in the table of Storage Warehouses beginning on page 34. The reference numbers identify warehouse locations on the Port Facilities Map.

HOISTING EQUIPMENT - ASHORE AND AFLOAT

General cargo usually is handled to and from vessels by ships' tackle. However, shore-based hoisting facilities are available to the public for making heavy lifts up to 225 tons. These facilities are owned and operated by the North Carolina State Ports Authority and are located on its general cargo wharves.

No floating cranes or derricks for making heavy lifts at shipside are based at the port.

The following tabulation gives details of the hoisting equipment ashore available for hire at the wharves of the North Carolina State Ports Authority. Cranes, derricks, and special-handling equipment at other waterfront facilities within the port area, usually for the sole use of the operating companies, are described under "Mechanical Handling Facilities" in the preceding table of Piers, Wharves, and Docks.

Berths 1 through 8 and Berths A and B, P.W.D. Ref. Nos. 7, 8, and 9

One, diesel-electric, traveling, full-portal, gantry crane, lift capacity 225 tons at 45-foot radius, and 157 tons at 60-foot radius.

One, diesel-electric, traveling, full-portal, gantry crane with a lift capacity of 115 tons at 45-foot radius, and 45 tons at 100-foot radius.

Two, diesel-electric, traveling, full-portal, gantry cranes, each with 85-foot boom and lift capacity of 45 tons at 40-foot radius and 27 tons at 60-foot radius. The cranes have a combined lift capacity of 90 tons at 40-foot radius when coupled with an equalizer.

Two, 40-ton, diesel-electric, traveling, container-handling cranes, each with hinged-cantilevered boom having 115-foot outreach, 63-foot back reach, and 210-foot container travel length.

One 140-ton, diesel, mobile crane with boom length to 270 feet.

MARINE REPAIR PLANTS

Three plants operate waterfront facilities at the port for the repair and conversion of tugs, towboats, fishing boats, barges, and other types of small vessels. In addition, 3 companies without waterfront facilities are engaged in various types of marine repair work. All maintain repair shops and portable equipment for making above-waterline repairs and for installing equipment, gear, and machinery on all types of vessels at berth in the harbor. Two of the plants with waterfront facilities operate haul-out or dry-docking facilities, which are described in the following section, "Drydocks, Marine Railways, and Vertical Boat Lift."

Details of the 6 marine repair facilities at the port are given in the table of Marine Repair Plants on page 37.

OIL HANDLING AND BUNKERING

P.W.D. REF. NO.		USABLE BERTHING SPACE	DEPTH ALONGSIDE MLW (FEET)	STORAGE TANKS	
				NUMBER	CAPACITY (BARRELS)
	<u>Left bank, Cape Fear River</u>				
3(1,2,&3)	Exxon Company, U.S.A.....	836	40	32	1,377,490
	do.....	166+166	25,12	-	-
4	Mobil Oil Corp.....	240	34	5	256,000
4	Amoco.....	-	-	43	347,000 (4)
5(1,2,&3)	Petroleum Fuel and Terminal Co..	260	33	17	450,000
5	Carolina Power and Light Co.....	-	-	9	370,000 (5)
5	Sunmark Industries.....	-	-	7	336,070
6	Texaco, Inc.....	350	34	9	332,000
6	Sunmark Industries.....	-	-	5	247,110
10	Paktank Atlantic Co.....	290	32	10	568,000 (6)
	do.....	200	18	-	-
11	Chevron, U.S.A.....	240	24	10	127,100 (7)
13(3) (8)	Amerada Hess Corp.....	240	34	14	580,000
14(2)	Union Oil Co. of California(9).. ATC Petroleum, Inc.....	620 -	34 -	29 15	910,800 615,000
	<u>Left bank, Northeast Cape Fear River</u>				
23	Seaboard Coast Line Railroad....	370	29	2	120,000 (5)
	<u>Right bank, Northeast Cape Fear River</u>				
31	Hercofina, Inc.....	350	11	2	95,250
	<u>Left bank, Cape Fear River</u>				
40	Chemphalt of Wilmington, Inc....	150	20	2	80,000 (5)
TOTAL.....		4,278	--	211	6,811,820

- (1) Bunkering vessels.
- (2) Fueling tugboats and other types of small vessels.
- (3) Loading barges for bunkering vessels at berth in harbor.
- (4) Includes 273,000 barrels of asphalt in 5 tanks.
- (5) Diesel fuel for own consumption.
- (6) Petrochemicals.
- (7) Asphalt.
- (8) Bunkering tankers berthed at wharf.
- (9) In addition to Union Oil Co. of California, the following use the facilities of this terminal:
Union Chemicals Division of Union Oil Co. of California; Gulf Oil Corp.; and Wright Chemical Co.

DRY AND COLD STORAGE WAREHOUSES

S.W. REF. NO.	OPERATOR	STORAGE AREA	
		DRY (SQ.FT.)	COLD (CU.FT.)
	<u>Almont Shipping Co.</u>		
11	Warehouse A.....	30,000 (1)	-
12	Warehouse B.....	22,500 (1)	-
13	Warehouse C.....	37,100 (1)	-
14	Warehouse D.....	40,000 (1&2)	-
15	Warehouse E.....	90,200 (1)	-
16	Warehouse F.....	76,700 (1)	-
1	<u>Cape Fear Bonded Warehouse, Inc.....</u>	116,000	-
	<u>East Coast Terminals, Inc.</u>		
17	Warehouse A.....	65,000 (1)	-
17	Warehouse B.....	4,900 (2)	-
18	Warehouse D.....	52,000 (1)	-
10	<u>New Hanover Cold Storage Co..</u>	-	250,000 (4)
	<u>North Carolina State Ports Authority</u>		
2	Building M-3.....	66,700	-
3	Warehouse No. 4.....	81,300	-
4	Building M-4.....	22,500	-
5	Cargo Shelter No. 1.....	150,000 (3)	-
6	Warehouse No. 2.....	87,400	-
7	Warehouse No. 1.....	79,600	-
8	Warehouse No. 3.....	82,400	-
9	<u>Wilmington Bonded Warehouse, Inc.....</u>	108,000	-
TOTAL....		1,212,300	250,000

- (1) Used for storing bulk fertilizer materials.
 (2) Used for storing bagged fertilizer materials.
 (3) Additional square feet leased to Queensboro Steel Corp. and Shipperside Packing Co.
 (4) Includes 50,000 cubic feet of cooler space and 200,000 cubic feet of freezer space.

STORAGE WAREHOUSES

(For public merchandise only)

WAREHOUSE REF. NO. ON MAP	1	2	3			
OPERATOR AND ADDRESS	Cape Fear Bonded Warehouse, Inc. 810 Sunnyvale Drive Wilmington, NC 28401	North Carolina State Ports Authority P.O. Box 3248 Wilmington, NC 28406	North Carolina State Ports Authority P.O. Box 3248 Wilmington, NC 28406			
BUILDING DESIGNATION/S LOCATION	- Same as above.	Building M-3 In rear of Berth 8 (P.W.D. Ref. No. 7).	Warehouse No. 4 In rear of Transit Shed No. 4 at Berth 6 (P.W.D. Ref. No. 7).			
KIND OF STORAGE	Dry.	Dry.	Dry.			
COMMODITIES USUALLY STORED	General merchandise including industrial materials, chemicals and metal products.	General merchandise.	General merchandise.			
DESCRIPTION Type of Construction	Steel frame, concrete walls; concrete floor.	Timber frame, wood covered; concrete floor.	Concrete frame, concrete walls topped by metal siding; concrete floor and roof.			
Number of Floors	One.	One.	One.			
Clear Height for Storage (Feet):						
First Floor.....	18	17	19.5-21.5			
Other Floors.....						
Load Capacity (Lbs/Sq.Ft.):						
First Floor.....	-	Unlimited	600			
Other Floors.....						
AREAS FOR PUBLIC STORAGE:	DRY STORAGE	COLD STORAGE	DRY STORAGE	COLD STORAGE	DRY STORAGE	COLD STORAGE
General Storage....(Sq.Ft.)	100,000		66,700		54,200	
U.S. Customs Bonded.(Sq.Ft.)	16,000		-		27,100	
Cooler Space.....(Cu.Ft.)						
Freezer Space.....(Cu.Ft.)						
Convertible Space... (Cu.Ft.)						
RAILWAY CONNECTIONS	One 3-car capacity platform-level track connects with Seaboard Coast Line Railroad.	None.	Two platform-level tracks along east side, total length 1,020 feet, join additional trackage serving terminal; connect with Seaboard Coast Line Railroad.			
TRUCKLOADING STATIONS	Twenty-three.	One.	Ten.			
HANDLING EQUIPMENT	One 10-ton, electric overhead bridge crane, one 5- and two 2½-ton electric, and one 1½-ton LP gas fork lift trucks	North Carolina State Ports Authority has 59 fork lift trucks with capacities from 4- to 26-tons available as required.	Use of equipment described under S.W. Ref. No. 2.			
FIRE PROTECTION	Automatic fire detection system and sprinkler system.	Sprinkler system in warehouse and hand extinguishers.	Sprinkler system in warehouse, water tower, and hand extinguishers.			
REMARKS	Warehouse also serves as container freight station. An additional 5 acre, fenced, open storage area available adjacent to warehouse.	-	Warehouse is divided into 3 sections by firewalls. Trucks have access to interior.			

WAREHOUSE REF. NO. ON MAP OPERATOR AND ADDRESS	4 North Carolina State Ports Authority P.O. Box 3248 Wilmington, NC 28406	5 North Carolina State Ports Authority P.O. Box 3248 Wilmington, NC 28406	6 North Carolina State Ports Authority P.O. Box 3248 Wilmington, NC 28406
BUILDING DESIGNATION/S LOCATION	Building M-4 In rear of Berth 5 (P.W.D. Ref. No. 8).	Cargo Shelter No. 1 In rear of Warehouse No 2(S.W.RefNo.6) and Transit Shed No 3,Berth 5(P.W.D. Ref. No. 8).	Warehouse No. 2 In rear of Transit Shed No. 3, Berth 5 (P.W.D. Ref. No. 8).
KIND OF STORAGE	Dry.	Dry.	Dry.
COMMODITIES USUALLY STORED	General merchandise.	General merchandise, boiler parts, machinery, structural steel, etc.	General merchandise.
DESCRIPTION Type of Construction	Timber frame, wood covered; concrete floor.	Steel frame, transit aides and roof; open at each end; asphalt floor.	Timber frame, metal-covered aides, steel roof trusses with metal roof; concrete floor.
Number of Floors	One.	One.	One.
Clear Height for Storage (Feet):			
First Floor.....	17	28	17-20
Other Floors.....			
Load Capacity (Lbs/Sq.Ft.):			
First Floor.....	Unlimited.	Unlimited.	500
Other Floors.....			
AREA FOR PUBLIC STORAGE:			
General Storage.....(Sq.Ft.)	-	150,000	87,400
U.S. Customs Bonded.(Sq.Ft.)	22,500	-	-
Cooler Space.....(Cu.Ft.)	-	-	-
Freezer Space.....(Cu.Ft.)	-	-	-
Convertible Space... (Cu.Ft.)	-	50,000	-
RAILWAY CONNECTIONS	None	One surface track serves interior of 2 bays of warehouse, total length 1,300 feet, joins additional trackage serving terminal, connects with Seaboard Coast Line Railroad.	One 690-foot, platform-level track along west side joins additional trackage serving terminal; connects with Seaboard Coast Line Railroad.
TRUCKLOADING STATIONS	One.	-	Eight.
HANDLING EQUIPMENT	Use of equipment described under S.W. Ref. No. 2	Use of equipment described under S.W. Ref. No. 2.	Use of equipment described under S.W. Ref. No. 2.
FIRE PROTECTION	Sprinkler system in warehouse, water tower, and hand extinguishers.	Sprinkler system in warehouse, water tower, and hand extinguishers.	Sprinkler system in warehouse, water tower and hand extinguishers.
REMARKS	Western portion of warehouse serves as Berth (Seaboard State Ports Authority supply department).	Warehouse is divided into 3 bays; Bay No 1 is leased to Queensboro Steel Co., south portion of Bay Nos. 4 and 5 leased to Shipside Packing Co	Warehouse is divided into 4 sections by firewalls. Trucks have access to interior of warehouse.

STORAGE WAREHOUSES

(For public merchandise only)

WAREHOUSE REF. NO. ON MAP OPERATOR AND ADDRESS	7 North Carolina State Ports Authority P.O. Box 3248 Wilmington, NC 28406	8 North Carolina State Ports Authority P.O. Box 3248 Wilmington, NC 28406	9 Wilmington Bonded Warehouse, Inc. 1212 South 13th Street Wilmington, NC 28401			
BUILDING DESIGNATION/S LOCATION	Warehouse No. 1 In rear of Transit Shed No. 2 at Berth 3 (P.W.O. Ref. No. 8).	Warehouse No. 3 In rear of Transit Shed No. 1 at Berths 1 and 2 (P.W.D. Ref. No. 8).	- Same as above.			
KIND OF STORAGE COMMODITIES USUALLY STORED	Ory. General merchandise.	Ory. General merchandise.	Dry. General merchandise.			
DESCRIPTION Type of Construction	Steel frame, concrete and brick walls; concrete floor and roof.	Concrete frame, concrete walls; con- crete floor and roof.	Reinforced concrete; concrete floor.			
Number of Floors	One.	One.	One.			
Clear Height for Storage (Feet):						
First Floor.....	19.5	19	18			
Other Floors.....						
Load Capacity (Lbs/Sq.Ft.):						
First Floor.....	600	600	Unlimited.			
Other Floors.....	-	-	-			
AREAS FOR PUBLIC STORAGE:	DRY STORAGE	COLD STORAGE	DRY STORAGE	COLO STORAGE	DRY STORAGE	COLO STORAGE
General Storage....(Sq.Ft.)	79,600		82,400		100,000	
U.S. Customs Bonded.(Sq.Ft.)	-		-		8,000	
Cooler Space.....(Cu.Ft.)						
Freezer Space.....(Cu.Ft.)						
Convertible Space...(Cu.Ft.)						
RAILWAY CONNECTIONS	Two platform-level tracks along east side, total length 1,084 feet, join additional trackage serving terminal; connect with Seaboard Coast Line Rail- road.	Two platform-level tracks along east side, capacity 6 cars on inner track serving warehouse, join additional trackage serving terminal; connect with Seaboard Coast Line Railroad.	One carfloor-level track along north side, capacity 5 cars; connect with Seaboard Coast Line Railroad.			
TRUCKLOADING STATIONS	West side, 10; rail platform, 12.	Six.	Seven.			
HANDLING EQUIPMENT	Use of equipment described under S. W. Ref. No. 2.	Use of equipment described under S. W. Ref. No. 2.	Six 2 3/4-ton fork lift trucks equipped with bale- and carton-clamps, and slip- sheet units.			
FIRE PROTECTION	Sprinkler system in warehouse, water tower, hand extinguishers, and watch- men.	Same as S. W. Ref. No. 7.	Automatic fire detection system and sprinkler system.			
REMARKS	Warehouse is divided into 3 sections by firewalls. Trucks have access to interior of warehouse.	Warehouse is divided into 3 sections by firewalls. Fumigation plant with 2 vacuum chambers adjacent to east side. Trucks have access to interior of warehouse.	-			

WAREHOUSE REF. NO. ON MAP	10	11	12			
OPERATOR AND ADDRESS	New Hanover Cold Storage Company 518 North 2nd Street Wilmington, NC 28401	Almont Shipping Co., Inc. P.O. Box 1726 Wilmington, NC 28401	Almont Shipping Co., Inc. P.O. Box 1726 Wilmington, NC 28401			
BUILDING DESIGNATION/S LOCATION	- Same as above.	Warehouse A. On Pier A (P.W.D. Ref. No. 25).	Warehouse B. On south side of South Berth (P.W.D. Ref. No. 26).			
KIND OF STORAGE	Cold.	Ory.	Dry.			
COMMODITIES USUALLY STORED	Perishable food commodities including seafood.	Bulk fertilizer materials.	Bulk fertilizer materials.			
DESCRIPTION Type of Construction	Concrete and brick; concrete floors.	Steel frame, asbestos sheet siding; wood floor.	Timber frame, wood covered; wood floor.			
Number of Floors	Five.	One.	One.			
Clear Height for Storage (Feet):						
First Floor.....	10	24	36			
Other Floors.....	10	-	-			
Load Capacity (Lbs/Sq.Ft.):						
First Floor.....	250	1,200	Unlimited.			
Other Floors.....	250	-	-			
AREAS FOR PUBLIC STORAGE:	DRY STORAGE	COLD STORAGE	ORY STORAGE	COLO STORAGE	ORY STORAGE	COLD STORAGE
General Storage....(Sq.Ft.)	-	-	30,000 (See Remarks)	-	22,500 (See Remarks)	-
U.S. Customs Bonded.(Sq.Ft.)	-	-	-	-	-	-
Cooler Space.....(Cu.Ft.)	50,000	-	-	-	-	-
Freezer Space.....(Cu.Ft.)	200,000	-	-	-	-	-
Convertible Space... (Cu.Ft.)						
RAILWAY CONNECTIONS	One platform-level track along north side, capacity 3 cars; connects with Seaboard Coast Line Railroad.	One platform-level track along south side, capacity 7 cars, connects with Seaboard Coast Line Railroad.	One depressed track along north side flanked by 8-foot wide rail platforms has capacity for 20 cars; connects with Seaboard Coast Line Railroad.			
TRUCKLOADING STATIONS	Five.	Two.	Two.			
HANDLING EQUIPMENT	One 1½-ton, electric elevator and three fork lift trucks.	Almont Shipping Co. has 12 diesel, mobile front end loaders with capa- cities from 1- to 4-cubic yards avail- able as required.	Use of equipment described under S. W. Ref. No. 11.			
FIRE PROTECTION	Hand extinguishers and hose.	Hydrants, hose reels, water barrels and watchmen.	pails, hand extinguishers, and watchmen.			
REMARKS	Direct ammonia expansion refrigeration system, temperature range of -20°F to 5°F in freezer, from 32°F to 50°F in cooler.	Warehouse has storage capacity for 8,000 tons of fertilizer materials re- ceived by rail or by vessel at North Berth (P.W.D. Ref. No. 27) via convey- or system also interconnecting Warehouses B thru E (S.W. Ref. Nos. 12 thru 16, respectively).	Warehouse has storage capacity for 5,000 tons of fertilizer materials received by conveyors from vessel at North Berth (P.W.D. Ref. No. 27) or Warehouses A and C thru E (S.W. Ref. Nos. 11 and 13 thru 16, respectively).			

STORAGE WAREHOUSES

(For public merchandise only)

WAREHOUSE REF. NO. ON MAP	13	14	15
OPERATOR AND ADDRESS	Almont Shipping Co., Inc. P.O. Box 1726 Wilmington, NC 28401	Almont Shipping Co., Inc. P.O. Box 1726 Wilmington, NC 28401	Almont Shipping Co., Inc. P.O. Box 1726 Wilmington, NC 28401
BUILDING DESIGNATION/S LOCATION	Warehouse C, On north side of South Berth (P.W.D. Ref. No. 26).	Warehouse D, In rear of Warehouses B and C (S.W. Ref. Nos. 12 and 13).	Warehouse E, In rear of Warehouse D (S.W. Ref. No. 14).
KIND OF STORAGE	Dry.	Dry.	Dry.
COMMODITIES USUALLY STORED	Bulk fertilizer materials.	Bulk and bagged fertilizer materials.	Bulk fertilizer materials.
DESCRIPTION Type of Construction	Timber frame, wood covered; wood floor.	Steel frame, asbestos sheet siding; concrete floor.	Timber frame, wood covered; asphalt floor.
Number of Floors	One.	One.	One.
Clear Height for Storage (Feet):			
First Floor.....	24	36	48
Other Floors.....			
Load Capacity (Lbs/Sq.Ft.):			
First Floor.....	1,100	Unlimited.	2,000
Other Floors.....			
AREAS FOR PUBLIC STORAGE:			
General Storage.....(Sq.Ft.)	37,100 (See Remarks)	40,000 (See Remarks)	90,200 (See Remarks)
U.S. Customs Bonded.(Sq.Ft.)			
Cooler Space.....(Cu.Ft.)			
Freezer Space.....(Cu.Ft.)			
Convertible Space... (Cu.Ft.)			
RAILWAY CONNECTIONS	One depressed track along south side flanked by 8-foot wide rail platforms has capacity for 15 cars; connects with Seaboard Coast Line Railroad.	One platform-level track along west side, capacity 10 cars; connects with Seaboard Coast Line Railroad.	One platform-level track along west side, capacity 14 cars; connects with Seaboard Coast Line Railroad.
TRUCKLOADING STATIONS	Two.	Two.	Two.
HANDLING EQUIPMENT	Use of equipment described under S.W. Ref. No. 11.	Use of equipment described under S.W. Ref. No. 11.	Use of equipment described under S.W. Ref. No. 11.
FIRE PROTECTION	Hydrants, hose, hand extinguishers, and watchmen.	Same as S.W. Ref. No. 13.	Sprinkler system in warehouse, hydrants, hose, hand extinguishers, and watchmen.
REMARKS	Warehouse has storage capacity for 8,000 tons of fertilizer materials re- ceived by conveyors from vessel at North Berth (P.W.D. Ref. No. 27) or Warehouses A, B, and D thru E (S.W. Ref. Nos. 11, 12 and 14 thru 16, respectively).	Warehouse has storage capacity for 28,000 tons of fertilizer materials received by conveyors from vessel at North Berth (P.W.D. Ref. No. 27) or Warehouses A, B, C, E and F (S.W. Ref. Nos. 11, 12, 13 and 15 and 16). Two bagging machines in warehouse, capacity 60 tons per hour each.	Warehouse has storage capacity for 55,000 tons of fertilizer materials received by conveyors from vessel at North Berth (P.W.D. Ref. No. 27) or Warehouses A thru D and F (S.W. Ref. Nos. 11 thru 14, and 16).

WAREHOUSE REF. NO. ON MAP	16	17	18
OPERATOR AND ADDRESS	Almont Shipping Co., Inc. P.O. Box 1726 Wilmington, NC 28401	East Coast Terminals, Inc. P.O. Box 1726 Wilmington, NC 28401	East Coast Terminals, Inc. P.O. Box 1726 Wilmington, NC 28401
BUILDING DESIGNATION/S LOCATION	Warehouse F, In rear of Warehouse E between Front and Harnett Streets.	Warehouses A and B, Right bank Cape Fear River approxi- mately 350 feet below Hilton Bridge.	Warehouse D, Right bank Cape Fear River approxi- mately 200 feet below Hilton Bridge.
KIND OF STORAGE	Dry.	Dry.	Dry.
COMMODITIES USUALLY STORED	Bulk fertilizer materials.	Bulk and bagged fertilizer materials.	Bulk fertilizer materials.
DESCRIPTION Type of Construction	Timber frame, wood covered; asphalt floor.	Warehouse A: Timber frame, wood sides covered with asphalt paper; wood floor; Warehouse B: timber frame, metal covered sides; asphalt floors.	Concrete frame, metal-covered sides; asphalt floor.
Number of Floors	One.	Warehouse A Warehouse B One, One,	One.
Clear Height for Storage (Feet):			
First Floor.....	48	15 8	12
Other Floors.....			
Load Capacity (Lbs/Sq.Ft.):			
First Floor.....	2,000	1,200 1,000	1,000
Other Floors.....			
AREAS FOR PUBLIC STORAGE:			
General Storage.....(Sq.Ft.)	76,700 (See Remarks)	65,000 (See Remarks)	52,000 (See Remarks)
U.S. Customs Bonded.(Sq.Ft.)			
Cooler Space.....(Cu.Ft.)			
Freezer Space.....(Cu.Ft.)			
Convertible Space... (Cu.Ft.)			
RAILWAY CONNECTIONS	Two platform-level tracks on west side, capacity 10 cars; connect with Seaboard Coast Line Railroad.	One platform-level track along north side of Warehouse A; one platform-level track along south side of both ware- houses, total capacity 9 cars; connect with Seaboard Coast Line Railroad.	One platform-level track along south side, capacity 11 cars, connects with Seaboard Coast Line Railroad.
TRUCKLOADING STATIONS	Two.	One, each.	One.
HANDLING EQUIPMENT	Use of equipment described under Ref. No. 11.	Diesel, mobile front end loaders.	Same as S. W. Ref. No. 17.
FIRE PROTECTION	Sprinkler system in warehouse, hydrants, hose, hand extinguishers, and watchmen.	One 2-inch line, pumps, hose, hand extinguishers, water barrels and pails, and watchmen.	Same as S. W. Ref. No. 17.
REMARKS	At time of survey warehouse was under construction and is to have storage capacity for 45,000 tons of fertilizer materials received by conveyors from vessel at North Berth (P.W.D. Ref. No. 27) or Warehouses A thru F (S.W. Ref. Nos. 11 thru 14).	Warehouse A and Warehouse B have a storage capacity for 12,000- and 1,000- tons of fertilizer materials, respec- tively. Bagged fertilizer materials stored in Warehouse A.	Warehouse has a storage capacity for 20,000 tons of fertilizer materials.

MARINE REPAIR PLANTS

REF. NO. OF NEAREST PIER OR WHARF	16	35
OPERATOR AND ADDRESS	Wilmington Iron Works, Inc. P.O. Box 329 Wilmington, NC 28402	Rumsey Marine and Drydock Route 6 - Box 3 Wilmington, NC 28405
LOCATION OF PLANT	Left bank of Cape Fear River, approximately 0.3 mile above Cape Fear Memorial Bridge.	Right bank of Northeast Cape Fear River, approximately 0.4 mile above Hilton Bridge.
REPAIR SHOPS AND EQUIPMENT	Shops: Machine, boiler, forge, steel fabrication, welding and pattern; brake press; shear machines; caulking machine; portable welding and sandblasting units; air compressors; wheel presses to 300 ton.	Machine, welding and electrical shops; steam generator; portable welding and sandblasting equipment; one 1,000-ton floating drydock; one 15-ton gantry crane.
NATURE OF WORK UNDERTAKEN	Above-waterline repairs to wooden aluminum and steel hull vessels; repairs to engines, boilers, deck machinery, and dynamos; sandblasting and painting.	Above- and below-waterline repairs up to capacity of floating drydock to wooden, aluminum and steel hull vessels; engine repairs; gas freeing; sandblasting and painting; electronic repairs by subcontract.
LARGEST SHAFTS PRODUCED	Lathe: 36-inch swing by 21-foot bed.	Lathe: 24-inch swing by 16-foot bed.
LARGEST CASTINGS PRODUCED	None.	None.
VESSEL CAPACITY AT PLANT	264 feet of berthing space at wharf.	One in drydock and 2 in slip.
REMARKS	Repair work done at wharf, in shops, and on board vessels at any location in harbor.	Repair work done at wharf, in shops, and on board vessels at any location in harbor.
REF. NO. OF NEAREST PIER OR WHARF	37	-
OPERATOR AND ADDRESS	Wilmington Shipyard, Inc. P.O. Drawer 2028 Wilmington, NC 28402	Southeastern Machine and Welding Co., Inc. P.O. Box 3383 Wilmington, NC 28402
LOCATION OF PLANT	Right bank of Northeast Cape Fear River, approximately 0.1 mile below highway bridge.	142 Shipyard Boulevard Wilmington, NC
REPAIR SHOPS AND EQUIPMENT	Shops: Machine, carpenter, electrical, and propeller; portable welding and sandblasting equipment; stationary air compressors; one 1,000-ton marine railway; one 100-ton vertical boat lift; one 15-ton, diesel mobile crane, and two 12½-ton, diesel, crawler cranes.	Shops: Machine, carpenter, welding; portable welding equipment. Mobile crane available as required.
NATURE OF WORK UNDERTAKEN	Above- and below-waterline repairs to small vessels up to capacity of marine railway; repairs to diesel and gasoline engines, propellers up to 8 feet in diameter, machinery, and electrical equipment; sandblasting, cleaning, painting, and gas freeing.	Above-waterline repairs to steel and aluminum hull vessels; repairs to engines, machinery, piping, deck machinery.
LARGEST SHAFTS PRODUCED	Lathe: 30-inch swing by 20-foot bed.	By sub-contract.
LARGEST CASTINGS PRODUCED	None.	None.
VESSEL CAPACITY AT PLANT	One on marine railway; one on vertical boat lift; 1,040 feet of berthing space at piers.	None.
REMARKS	Repair work done at piers, in shops, and on board vessels at any location in harbor.	Repair work done in shop and on board vessels at any location in harbor.
REF. NO. OF NEAREST PIER OR WHARF	-	-
OPERATOR AND ADDRESS	Port City Corporation 325 Forest Park Road Wilmington, NC 28401	Superior Machine Shop, Inc. P.O. Box 929 Wilmington, NC 28401
LOCATION OF PLANT	Same as above.	Eastwood Road (U.S. Highway 74), 0.25 mile southeast of Market Street Road (U.S. Highway 17).
REPAIR SHOPS AND EQUIPMENT	Combined machine, welding, boiler, and forge shop; portable welding equipment and air compressors; metal spraying; one 45-ton, gasoline, mobile crane with 50-foot boom and 25-foot jib.	Shops: Machine, welding, electronics, and fabrication shops; portable welding equipment and air compressors.
NATURE OF WORK UNDERTAKEN	Above-waterline repairs to steel hull vessels; machinery, boiler, evaporator, condenser, diesel engine, piping, shaft, propeller, electrical repairs and sandblasting.	Above-waterline repairs to steel and aluminum hull vessels; plating, electronic equipment, machinery, shaft, propellers, and boilers.
LARGEST SHAFTS PRODUCED	Lathe: 34-inch swing by 10-foot bed.	Lathe: 96-inch swing by 17-foot bed.
LARGEST CASTINGS PRODUCED	None.	None.
VESSEL CAPACITY AT PLANT	None.	None.
REMARKS	Repair work done in shop and on board vessels at any location in United States or foreign ports.	Repair work done in shop and on board vessels at any location in harbor. Plant has capacity to handle 12-foot diameter by 100-foot long pressure vessels.

DRYDOCKS, MARINE RAILWAYS, AND VERTICAL BOAT LIFT

A floating drydock, a marine railway, and a vertical boat lift are at 2 of the waterfront marine repair plants. The lift capacity of the floating drydock is 1,000 tons; haul-out capacities of the marine railway is 1,000 tons; and the lift capacity of the vertical boat lift is 100 tons.

Detailed descriptions of the floating drydock and the marine railway are given in the tables on pages 40 and 41.

The vertical boat lift is owned and operated by Wilmington Shipyard, Inc., and is at the company's plant (P.W.D. Ref. No. 37) on the right bank of the Northeast Cape Fear River below the highway bridge. It is electrically operated, has a lift capacity of 100 tons, and can handle vessels up to 85 feet in length by use of cradles extending from the platform to the open area in rear. A depth of 10 feet at mean low water is available over the bottom of the cradles, when submerged.

FLOATING EQUIPMENT

Floating equipment based at the Port of Wilmington includes 10 tugs with ratings of up to 3,200 horsepower used for towing, docking, undocking, and shifting vessels, and 4 tank barges with cargo-carrying capacities ranging up to 13,000 barrels for making deliveries of bunker fuel to vessels at berth.

The table on page 42 describes in detail the commercial tugs and tank barges serving the Port of Wilmington.

Additional information on floating equipment can be obtained from Transportation Series No. 5, titled "Transportation Lines on the Atlantic, Gulf, and Pacific Coasts." This report, published annually by the Corps of Engineers, Department of the Army, describes the American flag vessels engaged in the carriage of freight and passengers, listing the net registered tonnage, length, width, draft, horsepower, carrying capacity, and other details of construction; and describe the operations of each vessel operator, listing the waterways used and the localities served. Copies of this publication

are for sale by the District Engineer, U.S. Army Engineer District, New Orleans, P.O. Box 60267, New Orleans, LA 70160.

RAIL LINES

The Seaboard Coast Line Railroad serves the Port of Wilmington, NC. The North Carolina State Ports Authority owns and operates 4 switching engines and the trackage serving its general cargo terminal facilities (P.W.D. Ref. Nos. 7, 8, and 9); this trackage includes a storage yard and has a total capacity for approximately 500 cars.

FLOATING DRYDOCK

MOORED AT P.W.D. REF. NO.	35
OWNED AND OPERATED BY	Rumsey Marine and Drydock
ADDRESS	Route 6 - Box 3; Wilmington, NC 28405
LOCATION ON WATERFRONT	Right bank of Northeast Cape Fear River, approximately 0.4 mile above Hilton Railroad Bridge.
TYPE OF CONSTRUCTION	Steel, one section.
DIMENSIONS (FEET):	AFDL-18
Length overall.....	200
Length on blocks.....	184
Width overall.....	64
Maximum clear width for vessel.	50
Maximum depth over blocks, dock submerged.....	16
LIFTING CAPACITY (TONS)	1,000
MEAN RISE AND FALL OF TIDE (FEET)	3.9
CRANE SERVICE	One 15-ton, diesel-electric, traveling, revolving, full-portal, gantry crane with 100-foot boom.
UTILITIES AVAILABLE	Water, compressed air, A.C., 110/220/440 volts, and D.C., 110/230 volts.
LARGEST VESSEL HANDLED (FEET)	250- by 40-foot barge.
DATE BUILT AND/OR REBUILT	1943/-
REMARKS	Drydock is moored along 3 cylindrical, concrete- surfaced, solid-filled, breasting dolphins at outer end of upper side of slip.

MARINE RAILWAY

REF.NO.OF NEAREST PIER OR WHARF	37
OWNED BY	Wilmington Shipyard, Inc.
ADDRESS	P.O. Drawer 2028 Wilmington, NC 28402
LOCATION ON WATERFRONT	Right bank of Northeast Cape Fear River, approximately 0.1 mile below highway bridge.
TYPE	Crandall.
DIMENSIONS (FEET):	
Length of cradle.....	175
Length on blocks.....	165
Clear width of cradle at top of keel blocks.....	40
Depth over keel blocks at MHW	
Forward.....	10
Aft.....	14
HAULING POWER (TONS)	1,000
MEAN RISE AND FALL OF TIDE (FEET)	3.9
CRANE SERVICE	One 15-ton, diesel, mobile crane with 40-foot boom; two 12½-ton, diesel, crawler cranes, one with 50- and one with 55-foot boom.
UTILITIES AVAILABLE	Water, compressed air, steam, and A.C., 110/220/440 volts, and D.C., 110/220 volts.
LARGEST VESSEL HANDLED (FEET)	185- by 35-foot vessel; 245- by 45-foot barge.
DATE BUILT AND/OR REBUILT	1979
REMARKS	Shipyard also operates one 100-ton vertical boat lift which has handled vessels up to 22 by 85 feet.

FLOATING EQUIPMENT

(a) OPERATOR AND ADDRESS (b) BASE FROM WHICH OPERATED	NAME OR NUMBER AVAILABLE	DIMENSIONS OVERALL		DRAFT UNDER LOAD	HOW OPERATED	HORSE- POWER	CARGO CAPACITY (BARRELS)	REMARKS
		LENGTH (FEET)	WIDTH (FEET)					
		<u>TUGS</u>						
(a) Stone Towing Line 4 South Water Street Wilmington, NC 28401	Estell Stone	105.0	27.0	14.0	Diesel	1,200	-	Towing, docking, undocking and shifting vessels in Wilmington.
	Pocahontas	103.0	22.5	9.4	do.	1,080	-	
	R. R. Stone	86.4	23.0	10.5	do.	700	-	
	Socony 8	100.7	26.0	9.0	Steam	900	-	
	Stone Brothers	110.0	29.0	14.0	Diesel	1,300	-	
(a) Cape Fear Towing Co., Inc. P.O. Box 1466 Wilmington, NC 28402	Comet	102.0	20.5	11.0	Diesel	1,050	-	do.
	Fort Caswell	105.5	26.2	11.9	do.	3,200	-	
	Fort Fisher	105.5	26.2	11.9	do.	2,500	-	
	Fort Sumpter	95.0	22.5	10.3	do.	1,700	-	
	Shamrock	100.0	25.0	11.0	do.	1,800	-	
		<u>TANK BARGES</u>						
(a) O.E.DuRant, Inc. 520 North 3rd Street Wilmington, NC 28401	O.E.D.-2	212.0	36.0	10.0	-	-	13,000	One diesel pump, loading rate 1,800 to 2,000 barrels/hour.
(b) P.W.D. Ref. No. 34								
(a) Hanover Towing, Inc. P.O. Box 1152 Wilmington, NC 28401	Brazos	210.0	40.0	10.0	-	-	12,000	Two diesel pumps, loading rate 2,500 barrels/hour.
(b) P.W.D. Ref. No. 37	HT 80	180.0	40.0	9.0	-	-	8,000	Two diesel pumps, loading rate 2,000 barrels/hour.
	HT 91	195.0	35.0	10.0	-	-	9,100	do.

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*Diesel Fuel Wharf.....	23	21
Southern Wood Piedmont Co. Wharf.....	12	17
Stevedores, Inc. Barge Berth.....	28	23
Stone Towing Line		
Lower Wharf.....	18	19
Upper Wharf.....	19	20
Sunmark Industries, Division of Sun Oil Co. of Pennsylvania		
*North Carolina State Ports Authority		
Fuel Wharf.....	6	15
Petroleum Fuel and Terminal Co.		
Wharf.....	5	15
Texaco, Inc.		
*North Carolina State Ports Authority		
Fuel Wharf.....	6	15
Union Chemicals, Division of Union Oil Co. of California		
*Cape Fear Terminal Wharf.....	14	18
Union Oil Co. of California		
*Cape Fear Terminal Wharf.....	14	18
United States Government		
U.S. Army Corps of Engineers		
Boat Yard Wharf.....	41	27
U.S. Coast Guard Wharf.....	21	20
Wilmington, City of		
Market Street Wharf.....	20	20
Wilmington Iron Works, Inc. Wharf.....	16	19
Wilmington Shipyard, Inc. Piers.....	37	26
Wright Chemical Co.		
*Cape Fear Terminal Wharf.....	14	18

*Various operators.

THE PORT OF MOREHEAD CITY, NC

P O R T A N D H A R B O R C O N D I T I O N S

LOCATION AND GENERAL DESCRIPTION

The Port of Morehead City, North Carolina, is on a peninsula extending easterly from the mainland between Bogue Sound and Calico Creek. The port is 154 nautical miles northeast of Wilmington, NC and 249 nautical miles south of Norfolk, Virginia.

The deepwater approach from the Atlantic Ocean to the port is via a dredged channel across the bar and through Beaufort Inlet between Bogue and Shackleford Banks. The channel extends to a Y-shaped turning basin located between the east end of the peninsula and Radio Island at the mouth of the Newport River. Beaufort Inlet, about midway between Cape Hatteras and Cape Fear, is approximately 1.5 miles wide. Bogue Sound is a shallow body of water extending 22 miles westward along the coast from Beaufort Inlet to Bogue Inlet. It is separated from the ocean by Bogue Banks, a wooded beach 0.1 to 0.7 mile wide. The sound is about 2 miles wide midway of its length and narrow at each end; there are numerous marshy islets at the western end.

The route of the Atlantic Intracoastal Waterway passes through Morehead City harbor. One section of the waterway runs southward through the lower part of the Newport River to the turning basin, and another leads westward from the turning basin through Bogue Sound.

Waterfront facilities for deep-draft vessels are in the eastern part of the harbor facing the turning basin; facilities for fishing boats, recreational craft, and other types of small vessels are along Bogue Sound and Calico Creek. The principal waterborne commodities handled at the port are petroleum products, tobacco, and phosphate materials.

HARBOR AND CHANNEL IMPROVEMENTS BY THE UNITED STATES

The existing project, authorized by the River and Harbor Acts of June 25, 1910, July 3, 1930, August 26, 1937, July 3, 1958, and December 31, 1970, provides for:

A channel 42 feet deep and 450 feet wide from deep water in the Atlantic Ocean through the ocean bar at Beaufort Inlet, thence a cutoff channel 40 feet deep and 600 feet wide, thence an inner harbor channel 40 feet deep and 400 feet wide;

A turning basin off the North Carolina State Ports Authority Terminal with 40 feet in the turning basin's east leg, including a 1,200-foot diameter turning area, and 35 feet in the west leg of the turning basin;

A channel 12 feet deep and 100 feet wide from the turning basin to Sixth Street, Morehead City, thence 12 feet deep, 200 to 400 feet wide to Tenth Street; thence 6 feet deep and 75 feet wide to Bogue Sound.

The project is complete except for construction of the jetties.

The channel controlling depths and project dimensions are given in the table on page 49.

TIDAL RANGE AND CURRENTS

Tides: The mean range of tide at Morehead City is 2.9 feet.

Currents: Tidal currents along Beaufort Inlet Channel attain velocities of 2 to 3 knots. They usually set along the channels, but, at the entrance to Morehead City Channel, they usually set across the channel near the end of the flood period and beginning of the next ebb.

Heavy swells build up in Beaufort Inlet Channel with northerly or southerly winds, making boating hazardous and entry or departure of ships difficult during unfavorable tidal conditions. Tidal conditions are hazardous near and under the causeway north of the State Ports Authority Terminal. It was reported in May 1975, that the current will attain a velocity of 4 to 5 knots off the southwest corner of the State Ports Authority Terminal, and whirlpools will develop off the southeast corner at maximum tides.

ANCHORAGES

No specific areas in Morehead City harbor have been designated as anchorage grounds. Vessels may anchor outside the Beaufort Inlet from the sea buoy eastward to Cape Lookout where there is good, sand-shell, holding ground.

BRIDGES

No bridges cross the deep-draft channel from the turning basin to the ocean. Two parallel bridges cross the Atlantic Intracoastal Waterway at the mouth of the Newport River above the turning basin and connect Morehead City and Beaufort. The first, a rail trestle owned by the Beaufort and Morehead Railroad Company, has a single-leaf, bascule, channel span with a horizontal clearance of 80 feet and a clear height of 4.0 feet at mean high water in closed position; the second, state-owned, is a fixed, high-level, highway bridge with a horizontal clearance of 80 feet and a vertical clearance of 65 feet at mean high water.

WEATHER CONDITIONS

During July and August, average daytime temperatures reach the mid 80's and nighttime temperatures fall into the low 70's. Winters are mild with maximum temperatures in the mid 50's and minimums in the upper 30's to low 40's. Rainfall averages about 52 inches annually with more than one-third falling during July, August, and September. The number of days with measurable precipitation averages 4 to 7 per month throughout the year.

Information concerning temperature conditions, precipitation, prevailing wind direction, and fog is not readily available for Morehead City, North Carolina. The weather conditions at Wilmington, North Carolina, as presented on page 5 of this report, are nearly representative of those prevailing at Morehead City.

CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOW WATER (MLW)						PROJECT DIMENSIONS		
NAME OF CHANNEL	Left Outside Quarter	Left Inside Quarter	Right Inside Quarter	Right Outside Quarter	Date of Survey	Width (Feet)	Length (Naut. Miles)	Depth MLW (Feet)
Beaufort Inlet Channel	B26.5	31.0	40.5	A33.0	11-79	450	2.08	42
Widener at Bend	40.0	40.0	40.0	36.0	11-79	600	0.57	40
Morehead City Inner Harbor Channel	37.0	39.5	33.0	33.0	11-79	400-750	1.43	40
Turning Basin								
East Leg	A33.5	40.0	40.0	A38.0	12-78	800-1000		40
West Leg	A32.5	35.0	35.0	35.0	5-78	850-1450		35
Morehead City Channel:								
Turning Basin to 6th St.	9 (mid-width 80 ft.)				4-76	100	0.29	12
6th St. to 10th St.	7				4-76	200-400	0.32	12
10th St. to Bogue Sound	6 (mid-width 60 ft.)				4-76	75	0.45	6

A. Shoaling to 30 feet exists on the edge of the channel.

B. Shoaling to 12 feet exists in the vicinity of Buoy 9. Depths are expressed to the nearest half foot.



U.S. Coast Guard Wharf
(P.W.D. Ref. No. 1)



East Side of U.S. Coast Guard Basin
(P.W.D. Ref. No. 2)



U.S. Army Corps of Engineers Wharf
(P.W.D. Ref. No. 5)



North Carolina State Ports Authority
Barge Terminal North
(P.W.D. Ref. No. 6)



North Carolina State Ports Authority,
Berths Nos. 2 and 3
(P.W.D. Ref. No. 9)



North Carolina State Ports Authority,
Berths Nos. 6 and 7
(P.W.D. Ref. No. 11)



North Carolina State Ports Authority,
Berths Nos. 8 and 9
(P.W.D. Ref. No. 12)



Davis Fish Co. Wharf
(P.W.D. Ref. No. 16)



Morehead Gulf Dock
(P.W.D. Ref. No. 17)



Atlantis Marine Service Wharf
(P.W.D. Ref. No. 20)



Institute of Marine Science of University of
North Carolina Wharf
(P.W.D. Ref. No. 21)



North Carolina Division of Commercial and
Sport Fisheries Wharf
(P.W.D. Ref. No. 22)

THE PORT OF MOREHEAD CITY, NC

P O R T A N D H A R B O R F A C I L I T I E S

PIERS, WHARVES, AND DOCKS

Twenty-two piers, wharves, and docks are described in this report for the Port of Morehead City. Six of these facilities are for deep-draft vessels and are located on the Turning Basin; the remaining 16 waterfront facilities are for use of fishing boats, barges, and other types of small vessels and are located on Calico Creek, Newport River, Bogue Sound, and the north side of the easterly end of Bogue Banks. Each facility is described under a reference number in the table of Piers, Wharves, and Docks beginning on page 55. These reference numbers designate facility locations on the accompanying Port Facilities Maps.

Waterfront facilities in the port which are used exclusively by recreational or active military craft, and generally those waterfront facilities providing nonmaritime use are not included in this report.

A summary of the facilities engaged in handling general cargo in Morehead City is given in the table on page 54.

The table on the following page summarizes the functional uses of the various piers, wharves, and docks at Morehead City. Many of these wharves are used for multiple purposes as indicated in the table; each can be identified by its respective P.W.D. reference number.

PURPOSE FOR WHICH USED

LOCATION	A		B		C		D		BOGUE SOUND										E			
P.W.D. REFERENCE NUMBERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Cargo handling:																						
General cargo:																						
Conventional.....										•	•	•										
Containerized.....												•										
Roll-on roll-off.....												•										
Heavy lift items.....											•	•										
Asphalt.....																						
Bulk cargo (dry misc.)..									•													
Fertilizer (liquid).....				•						•												
Fish meal.....								•				•										
Logs.....												•										
Lumber.....											•	•										
Machinery/heavy equipment.....											•	•										
Petroleum products.....				•				•														
Phosphate, nonprocessed.					•																	
Phosphate, processed....							•		•													
Phosphoric acid.....							•		•													
Seafood.....														•			•					
Steel/steel products....											•	•										
Sulphur (dry).....			•	•							•											
Tobacco.....											•	•										
Wood chips.....									•													
Marine repair.....																		•	•			
Bunkering (vessels).....								•														
Fueling small vessels.....													•			•	•					
Icing fishing vessels.....														•								
Mooring:																						
Company-owned equipment.																		•				
Fishing vessels.....														•		•	•		•			
Government equipment....	•	•			•																•	•
Oceanographic research vessels.....																						
Sport fishing vessels...													•		•	•		•				•

SUMMARY OF GENERAL CARGO FACILITIES

P.W.D. REF. NO.	TERMINAL	BERTHING SPACE (FEET)	DEPTHS ALONGSIDE AT MLW (FEET)	TRANSIT SHEDS	
				NUMBER	CARGO SPACE (NET SQ.FT.)
	<u>North Carolina State Ports Authority</u>				
10(1)	Berths Nos. 4 and 5.....	1,281	35	2	113,300 total (4)
11(2)	Berths Nos. 6 and 7.....	1,090	35	1	90,240
12(2&3)	Berths Nos. 8 and 9.....	1,350	35	1	45,000
TOTAL.....		3,721	--	4	248,540

(1) Also used for receipt of asphalt and liquid fertilizer.

(2) Also used for tobacco, lumber, steel products, machinery, and heavy-lift items.

(3) Containerized and roll-on, roll-off cargo.

(4) Fumigation plant with two 9,000-cubic foot, vacuum chambers in rear of east end of transit shed - Bldg. No. 1.

Corps of Engineers Port Code No. 11590

REFERENCE NUMBER ON MAP	1 Dock Code No. 975			2 Dock Code No. 975			3 Dock Code No. 060		
NAME	U.S. Coast Guard Wharf.			U.S. Coast Guard Boat Basin.			Aviation Fuel Terminals Barge Wharf.		
LOCATION ON WATERFRONT	North side of east end of Bogue Banks, northwest of Fort Macon.			North side of east end of Bogue Banks, northwest of Fort Macon.			West shore, and approximately 0.7 mile from lower end of Radio Island; east side of Turning Basin at inner end of Morehead City Channel.		
OWNED BY	U. S. Government.			U. S. Government.			Aviation Fuel Terminals, Inc.		
OPERATED BY	U. S. Coast Guard.			U. S. Coast Guard.			do.		
PURPOSE FOR WHICH USED	Mooring U.S. Coast Guard vessels.			Mooring U.S. Coast Guard vessels.			Shipment of sulphur.		
TYPE OF CONSTRUCTION	Concrete pile, concrete-decked, off-shore wharf with two 14- by 20-foot wide, concrete, ramp approaches extending from steel sheet pile bulkhead with solid fill; 2 timber mooring dolphins on upper side in line with face.			Rectangular-shaped basin formed by steel sheet pile bulkheads with solid fill; part concrete- and part asphalt-surfaced along rear of east side.			Concrete pile, concrete-decked offshore wharf with 100- by 8-foot walkway and pipeline trestle approach; 2 concrete filled, steel pipe pile, concrete-capped breasting dolphins in line with face.		
DESCRIPTION	Face	Lower side	Upper side	East side	Head of basin	West side	Face	Lower side	Upper side
Dimensions (Feet)	300	20	20	630	180	200+60	20	15	15
Depth Alongside at MLW Do.	25	-	-	6-17	6	6-7	12	-	-
Usable Berthing Space Do.	320 w/dolphins.	-	-	630	90	120	280 w/dolphins.	-	-
Width of Apron Do.	Open.			Open.			Open.		
Height of Deck Above MLW Do.	11			5			12		
Load Capacity per Sq.Ft. (Lbs.)	1,000			-			-		
Lighted or Unlighted	Lighted.			Lighted.			Lighted.		
TRANSIT SHEDS	None.			None.			None.		
Number and Type of Construction									
Length and Width (Feet)									
Height Inside Do.									
Floor Area for Cargo (Sq.Ft.)									
Load Capacity per Sq.Ft. (Lbs.)									
Cargo Doors									
MECHANICAL HANDLING FACILITIES	One 30- and one 20-ton, diesel, mobile cranes with 40- and 35-foot booms, respectively.			Use of mobile equipment described under Ref. No. 1.			One 2-ton, hand-operated, mast-and-boom derrick with 15-foot boom.		
RAILWAY CONNECTIONS	None.			None.			None.		
HIGHWAY CONNECTIONS	Via road, asphalt, 18 feet wide, from Fort Macon Road, asphalt, 25 feet wide.			Same as Ref. No. 1.			Via road, asphalt, 20 feet wide, from U.S. Highway 70, paved.		
WATER SUPPLY (Available to Vessels)	Through one 2½-inch line.			Same as Ref. No. 1.			None.		
ELECTRIC CURRENT (Available to Vessels)	A.C., 110 volts, single-phase, 60-cycle; A.C., 220/440 volts, 3-phase, 60-cycle.			Same as Ref. No. 1.			None.		
FIRE PROTECTION (Other than City)	Pumps, hose, and hand extinguishers.			Same as Ref. No. 1.			Foam system, hydrants, hose, and 750-gallon per minute pump.		
REMARKS	U.S. Coast Guard Fort Macon Base located in rear.			One 60- by 45-foot building used as boathouse at head of basin. Additional berthing available along the sides of two 120- by 4-foot, timber pile, timber-decked piers extending from sides of boathouse; and 300 feet of additional berthing space is available alongside row of 3 timber mooring dolphins extending at angle from outer end of west side.			One steam-traced, 8-inch pipeline extends from wharf to 3 steel storage tanks at rear, total capacity 45,000 long tons of sulphur.		

PIERS, WHARVES, AND DOCKS

Corps of Engineers Port Code No. 11590

Corps of Engineers Port Code No. 115	4	Dock Code No. 060	5	Dock Code No. .	6	Dock Code No. 702																																																																																																
NAME	Aviation Fuel Terminals Tanker Wharf.		Corps of Engineers Wharf.		North Carolina State Ports Authority, Barge Terminal North.																																																																																																	
LOCATION ON WATERFRONT	West shore, approximately 0.85 mile from lower end of Radio Island; east side of Turning Basin at inner end of Morehead City Channel.		Right bank of Calico Creek Channel approximately 2,400 feet above entrance to Newport River.		Right bank of Calico Creek Channel at entrance to Newport River.																																																																																																	
OWNED BY	Aviation Fuel Terminals, Inc.		North Carolina State Ports Authority.		North Carolina State Ports Authority.																																																																																																	
OPERATED BY	do.		Corps of Engineers, U.S. Army.		do.																																																																																																	
PURPOSE FOR WHICH USED	Receipt of petroleum products, sulphur, and liquid fertilizer by vessel, and shipment by barge.		Mooring government-owned floating equipment.		Receipt of nonprocessed phosphate materials by self-unloading barges.																																																																																																	
TYPE OF CONSTRUCTION	Concrete pile, concrete-decked, off-shore wharf with loading platform on lower side, with a 300- and a 350- by 3-foot catwalk and pipeline trestle approaches from shore, respectively; 4 concrete breasting dolphins in line with face of wharf and platform; steel catwalk connects dolphins and lower platform to wharf; and 4 mooring dolphins at rear.		Timber pile, timber-decked offshore wharf with 60- by 8-foot approach to lower side; 2 timber mooring dolphins in line with face.		Concrete-capped, steel sheet pile bulk-head with part asphalt-surfaced solid fill on timber relieving platform supported by timber piles; fronted by timber fender system.																																																																																																	
DESCRIPTION	<table><tr><th></th><th>Face</th><th>Wharf Sides</th><th>Loading platform</th></tr><tr><td>Dimensions (Feet)</td><td>100</td><td>10+20, each</td><td>30 by 20</td></tr><tr><td>Depth Alongside at MLW Do.</td><td>32</td><td>-</td><td>32</td></tr><tr><td>Usable Berthing Space Do.</td><td>220 w/dolphins (See Remarks)</td><td></td><td></td></tr><tr><td>Width of Apron Do.</td><td>Open.</td><td></td><td></td></tr><tr><td>Height of Deck Above MLW Do.</td><td>12</td><td></td><td>7</td></tr><tr><td>Load Capacity per Sq.Ft. (Lbs.)</td><td>500</td><td></td><td>-</td></tr><tr><td>Lighted or Unlighted</td><td>Lighted.</td><td></td><td>Lighted.</td></tr></table>			Face	Wharf Sides	Loading platform	Dimensions (Feet)	100	10+20, each	30 by 20	Depth Alongside at MLW Do.	32	-	32	Usable Berthing Space Do.	220 w/dolphins (See Remarks)			Width of Apron Do.	Open.			Height of Deck Above MLW Do.	12		7	Load Capacity per Sq.Ft. (Lbs.)	500		-	Lighted or Unlighted	Lighted.		Lighted.	<table><tr><th></th><th>Face</th><th>Lower side</th><th>Upper side</th></tr><tr><td>Dimensions (Feet)</td><td>60</td><td>66</td><td>6+60</td></tr><tr><td>Depth Alongside at MLW Do.</td><td>6-8</td><td>-</td><td>-</td></tr><tr><td>Usable Berthing Space Do.</td><td>140 w/dolphins (See Remarks)</td><td></td><td></td></tr><tr><td>Width of Apron Do.</td><td>Open.</td><td></td><td></td></tr><tr><td>Height of Deck Above MLW Do.</td><td>7</td><td></td><td>10</td></tr><tr><td>Load Capacity per Sq.Ft. (Lbs.)</td><td>-</td><td></td><td>1,000</td></tr><tr><td>Lighted or Unlighted</td><td>Lighted.</td><td></td><td>Lighted.</td></tr></table>			Face	Lower side	Upper side	Dimensions (Feet)	60	66	6+60	Depth Alongside at MLW Do.	6-8	-	-	Usable Berthing Space Do.	140 w/dolphins (See Remarks)			Width of Apron Do.	Open.			Height of Deck Above MLW Do.	7		10	Load Capacity per Sq.Ft. (Lbs.)	-		1,000	Lighted or Unlighted	Lighted.		Lighted.	<table><tr><th></th><th>Face</th><th></th><th></th></tr><tr><td>Dimensions (Feet)</td><td>600</td><td></td><td></td></tr><tr><td>Depth Alongside at MLW Do.</td><td>15</td><td></td><td></td></tr><tr><td>Usable Berthing Space Do.</td><td>600</td><td></td><td></td></tr><tr><td>Width of Apron Do.</td><td>Open.</td><td></td><td></td></tr><tr><td>Height of Deck Above MLW Do.</td><td>10</td><td></td><td></td></tr><tr><td>Load Capacity per Sq.Ft. (Lbs.)</td><td>1,000</td><td></td><td></td></tr><tr><td>Lighted or Unlighted</td><td>Lighted.</td><td></td><td></td></tr></table>			Face			Dimensions (Feet)	600			Depth Alongside at MLW Do.	15			Usable Berthing Space Do.	600			Width of Apron Do.	Open.			Height of Deck Above MLW Do.	10			Load Capacity per Sq.Ft. (Lbs.)	1,000			Lighted or Unlighted	Lighted.		
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Lighted or Unlighted	Lighted.																																																																																																					
TRANSIT SHEDS	None.		None.		None.																																																																																																	
Number and Type of Construction	Wharf: One 5-ton, hand-operated, mast-and-boom derrick with 42-foot boom for handling hose. Platform: One 12-inch, swivel-jointed pipeline loading arm; one 2-ton hand-operated, mast-and-boom derrick with 25-foot boom.		None.		Barges unload phosphate materials into 2 receiving hoppers on north side of wharf; unloading rate 1,000 tons per hour. Each hopper serves a 36-inch, electric, inclined, belt conveyor extending to a covered, 42-inch, electric, low-level, belt conveyor along rear of wharf with a 42-inch, covered, inclined, takeoff conveyor extending to a 106,000-ton capacity (150- by 600-foot) non-processed phosphate storage building in rear. Phosphate materials may also be transferred directly from wharf via the above-described conveyor system to a covered, 60-inch, electric, belt-conveyor system extending from the storage building to gallery and vessel-loading tower described (continued under Remarks)																																																																																																	
MECHANICAL HANDLING FACILITIES	Wharf: One 5-ton, hand-operated, mast-and-boom derrick with 42-foot boom for handling hose. Platform: One 12-inch, swivel-jointed pipeline loading arm; one 2-ton hand-operated, mast-and-boom derrick with 25-foot boom.		None.		Barges unload phosphate materials into 2 receiving hoppers on north side of wharf; unloading rate 1,000 tons per hour. Each hopper serves a 36-inch, electric, inclined, belt conveyor extending to a covered, 42-inch, electric, low-level, belt conveyor along rear of wharf with a 42-inch, covered, inclined, takeoff conveyor extending to a 106,000-ton capacity (150- by 600-foot) non-processed phosphate storage building in rear. Phosphate materials may also be transferred directly from wharf via the above-described conveyor system to a covered, 60-inch, electric, belt-conveyor system extending from the storage building to gallery and vessel-loading tower described (continued under Remarks)																																																																																																	
RAILWAY CONNECTIONS	Three surface tracks in rear serve one 6- and one 10-car capacity tank car loading racks and join with a 125-car capacity storage yard; join with Beaufort & Morehead Railroad.		None.		Two carfloor-level tracks along south side of fishmeal storage building, total length 1,200 feet; connect with Beaufort & Morehead Railroad and Atlantic and East Carolina Railway (Southern Railway System).																																																																																																	
HIGHWAY CONNECTIONS	Via road, asphalt, 20 feet wide, from U.S. Highway 70, paved.		Gravel and shell road, various widths, from North Carolina State Ports Authority terminal roads, asphalt, various widths, from Arendell Street.		Via port terminal road, asphalt, 20 feet wide, from Arendell Street, asphalt, 25 feet wide.																																																																																																	
WATER SUPPLY (Available to Vessels)	Through one 3-inch line with hose connections.		Through 3/4-inch line.		Through one 10-inch line with 2 1/2-inch hose connections.																																																																																																	
ELECTRIC CURRENT (Available to Vessels)	None.		A.C., 120 volts, single-phase, 60-cycle; A.C., 240 volts, 3-phase, 60-cycle.		A.C., 480 volts, 3-phase, 60-cycle.																																																																																																	
FIRE PROTECTION (Other than City)	Foam system, hydrants, hose, 750-gallon per minute pump, and one monitor nozzle.		None.		Hydrants, hose, water line, hand extinguishers, and one 50,000-gallon water tower.																																																																																																	
REMARKS	Tenvers 620 feet in length are berthed at wharf. Three 10-inch pipelines extend from wharf to 10 steel, petroleum storage tanks, total capacity 600,000 barrels; and two 10 inch pipelines extend from wharf to 3 steel, liquid fertilizer storage tanks, total capacity 150,000 barrels. One 12-inch, steam-traced pipeline extends from wharf to sulphur storage tanks described under Ref. No. 3.		Additional 50-feet of berthing at rear of face in 5 feet of water. Small boat launching ramp located on upper side at rear.		Under Berths Nos. 2 and 3 (Ref. No. 9). Rail mounted, electric, bucket-wheel reclaimers located inside phosphate storage building, rate 3,000 tons per hour; serves 60-inch, electric, belt-conveyor system extending to Berths Nos. 2 and 3 (Ref. No. 9). Two 7-cubic yard, front-end loaders serve phosphate storage building and use of mobile cranes described under Ref. No. 10 as required. Fishmeal warehouse, total capacity 7,000 tons, and approximately 23 acres of open storage area located in rear. Phosphate is mined and processed at Lee Creek Mine of Texas Gulf Sulphur Co. located about 60 miles north on the Pamlico River at Aurora, NC.																																																																																																	

PIERS, WHARVES, AND DOCKS

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Corps of Engineers Port Code No. 11590

REFERENCE NUMBER ON MAP	7	Dock Code No. 702	8	Dock Code No. 702	9	Dock Code No. 702
NAME	North Carolina State Ports Authority, Barge Terminal East.		North Carolina State Ports Authority, Berth No. 1.		North Carolina State Ports Authority, Berths Nos. 2 and 3.	
LOCATION ON WATERFRONT	Right bank Newport River, above U.S. Highway 70 Bridge.		Right bank of Newport River, below Beaufort & Morehead Railroad bridge.		Newport River, west side of Turning Basin at inner end of Morehead City Channel, below Beaufort & Morehead Railroad bridge.	
OWNED BY	North Carolina State Ports Authority.		North Carolina State Ports Authority.		North Carolina State Ports Authority.	
OPERATED BY	do.		North Carolina State Ports Authority and Colonial Oil Industries, Inc.		do.	
PURPOSE FOR WHICH USED	Receipt of phosphoric acid and processed phosphate materials by self-unloading barges; mooring towboats and barges.		Receipt and shipment of petroleum products by barge; bunkering vessels.		Shipment of dry bulk materials including phosphate, wood chips, and fishmeal; shipment of phosphoric acid.	
TYPE OF CONSTRUCTION	Concrete-capped, steel sheet pile bulkhead with solid fill on timber relieving platform supported by timber piles; fronted by rubber fender system.		Concrete-capped, steel sheet pile bulkhead with part concrete-surfaced solid fill on timber relieving platform supported by timber piles; fronted by rubber fender system. (See Remarks.)		Concrete-capped, steel sheet pile bulkhead with concrete- and asphalt-surfaced solid fill on timber relieving platform supported by timber piles; fronted by rubber fender system.	
DESCRIPTION	Face		South side (face)	East end	North side	Face
Dimensions (Feet)	733		350	80	101	1,000
Depth Alongside at MLW Do.	15		36	36	0-35	40
Usable Berthing Space Do.	650		350	80	101	1,000
Width of Apron Do.	Open.		Open.			Open.
Height of Deck Above MLW Do.	10		10, deck; 2, ends of ramps.			10
Load Capacity per Sq.Ft. (Lbs.)	1,000		1,000			1,000
Lighted or Unlighted	Lighted.		Unlighted.			Lighted.
TRANSIT SHEDS	None.		None.			None.
Number and Type of Construction						
Length and Width (Feet)						
Height Inside Do.						
Floor Area for Cargo (Sq.Ft.)						
Load Capacity per Sq.Ft. (Lbs.)						
Cargo Doors						
MECHANICAL HANDLING FACILITIES	Barges unload phosphate materials into 2 receiving hoppers, unloading rate 1,000 tons per hour. Each hopper serves a 42-inch belt-conveyor system extending to a 40,000-ton capacity (500-by 175-foot) air-support, processed phosphate storage building at rear. Conveyor system extends from north side of building to connect with conveyor system serving Barge Terminal North (Ref. No. 6) providing direct loading from wharf to vessels at Berths Nos. 2 and 3 (Ref. No. 9); or reclaiming (continued under Remarks)		None.		One electric, traveling, vessel-loading tower on wharf with hinged-cantilevered conveyor boom and loading chute equipped with trimmer having outboard reach of 65 feet. Tower is served by a 60- to 66-inch wide, electric, belt-conveyor system in gallery extending long rear of wharf from phosphate storage buildings and belt-conveyor systems described under Ref. Nos. 6 and 7, providing loading rates for barge to ship, 600 tons per hour; storage to ship, 3,000 tons per hour; of rock phosphate, and 600 tons per hour of (continued under Remarks)	
RAILWAY CONNECTIONS	None.		One surface track serves 14-car capacity tank car loading rack, joins additional terminal trackage in rear; connects with Atlantic and East Carolina Railway (Southern Railway System). (See Remarks.)		Two surface tracks on apron, total length 1,800 feet; and one parallel, 400-foot, platform-level track 130 feet in rear, join additional terminal trackage; connect with Atlantic and East Carolina Railway (Southern Railway System).	
HIGHWAY CONNECTIONS	Via port terminal road, asphalt, 20 feet wide, from Arendell Street, asphalt, 25 feet wide.		Same as Ref. No. 7.		Same as Ref. No. 7.	
WATER SUPPLY (Available to Vessels)	Through one 10-inch line with 2½-inch connections.		Through one 6-inch line with 2½-inch connections.		Through one 12-inch line with four 2½-inch hose connections.	
ELECTRIC CURRENT (Available to Vessels)	A.C., 480 volts, 3-phase, 60-cycle.		None.		None.	
FIRE PROTECTION (Other than City)	Hydrants, hose, water line, hand extinguishers, and one 50,000-gallon water tower.		Same as Ref. No. 7.		Same as Ref. No. 7.	
REMARKS	phosphate from storage in building via two 2- and one 1½-cubic yard, diesel, mobile front-end loaders loading material into hoppers serving above-described conveyor system, loading rate 600 tons per hour. In addition, one 6-inch, swivel-jointed, pipeline unloading arm serves a 6-inch pipeline extending from wharf to 3 phosphoric acid storage tanks at rear, total capacity 81,600 barrels. At time of survey, mechanical handling facilities were under construction and are described as they will appear and operate upon completion.		Three 50-foot wide, concrete ramps are located on west portion of south side (face) of wharf apron. Colonial Oil Industries, Inc.: Two 10- and one 8-inch pipelines extend from wharf to 7 steel storage tanks in rear; total capacity 240,000 barrels. Vessels are bunkered at an average rate of 1,000 barrels per hour, barges at 2,000 barrels per hour. At time of survey, track and tank car loading rack were inoperable.		processed phosphate; and combination of barge and storage to ship, 1,200 tons per hour. Open storage area available at terminal in rear has capacity for approximately 40,000 tons of wood chips. One 12-inch pipeline extends to wharf from phosphoric acid tanks described under Ref. No. 7, loading rate 950 tons per hour.	

PIERS, WHARVES, AND DOCKS

Corps of Engineers Port Code No. 11590

REFERENCE NUMBER ON MAP

	10	Dock Code No. 702	11	Dock Code No. 702	12	Dock Code No. 702
NAME	North Carolina State Ports Authority, Berths Nos. 4 and 5.		North Carolina State Ports Authority, Berths Nos. 6 and 7.		North Carolina State Ports Authority, Berths Nos. 8 and 9.	
LOCATION ON WATERFRONT	Bogue Sound, north side of Turning Basin at inner end of Morehead City Channel.		Bogue Sound, north side of Turning Basin at inner end of Morehead City Channel.		Bogue Sound, above west end of Turning Basin at inner end of Morehead City Channel.	
OWNED BY	North Carolina State Ports Authority.		North Carolina State Ports Authority.		North Carolina State Ports Authority.	
OPERATED BY	do.		do.		do.	
PURPOSE FOR WHICH USED	Receipt and shipment of general cargo in foreign and domestic trades; receipt and shipment of liquid fertilizer; receipt of asphalt.		Receipt and shipment of general cargo including tobacco, lumber, steel, machinery, and heavy-lift items in foreign and domestic trades.		Receipt and shipment of general, roll-on roll-off and containerized cargo, including tobacco, logs, lumber, steel, machinery, fishmeal, and heavy lift items in foreign and domestic trades.	
TYPE OF CONSTRUCTION	Concrete-capped, steel sheet pile bulkhead with concrete-surfaced solid fill on timber relieving platform supported by timber piles; fronted by rubber and timber fender system.		Concrete-capped, steel sheet pile bulkhead with concrete-surfaced solid fill on timber relieving platform supported by timber piles; fronted by rubber fender system.		Concrete-capped, steel sheet pile bulkhead with concrete-surfaced solid fill on concrete relieving platform supported by timber piles; fronted by rubber fender system, with concrete roll-on roll-off ramp on upper side of inner end.	
DESCRIPTION	Face		Face		Face	Roll-on/roll-off ramp
Dimensions (Feet)	1,281		1,090		1,350	
Depth Alongside at MLW Do.	35		35		35	
Usable Berthing Space Do.	1,281		1,090		1,350	
Width of Apron Do.	30 and 40		Open and 45.		Open	
Height of Deck Above MLW Do.	10		10		Apron, 10, ramp, 8.	
Load Capacity per Sq.Ft. (Lbs.)	1,000		1,000		1,000	
Lighted or Unlighted	Lighted.		Lighted.		Lighted.	
TRANSIT SHEDS	Bldg. No. 1- Steel frame, concrete block with brick veneer walls; concrete floor.		Bldg. No. 2- Steel frame, metal covered; concrete floor.		Bldg. No. 3- Concrete with concrete floor.	
Number and Type of Construction	Bldg. No. 1- Steel frame, concrete block with brick veneer walls; concrete floor.		Bldg. No. 2- Steel frame, metal covered; concrete floor.		Bldg. No. 3- Concrete with concrete floor.	
Length and Width (Feet)	480 X 125; 300 X 75		360 X 190		640 X 188	
Height Inside Do.	16		18		19	
Floor Area for Cargo (Sq.Ft.)	62,000, net.		51,300, net.		90,240, net.	
Load Capacity per Sq.Ft. (Lbs.)	1,000		1,000		1,000	
Cargo Doors (Feet)	Shipside: three, 16 by 16, and six, 12 by 12; rear: six, 12 by 12.		Shipside: four, 12 by 16 and four, 12 by 12; rear: nine, 12 by 12; west end: one 18 by 16.		Shipside: twelve, 16 by 16; rear: same; east end: three, 16 by 12; and one 18 by 16; west end: one 18 by 16.	
MECHANICAL HANDLING FACILITIES	The following equipment is available for use at all North Carolina State Ports Authority facilities: fifty-five fork lift trucks with capacities ranging from 7½- to 2 tons; two 72-ton, diesel mobile cranes, each with 50-foot boom and 2-cubic yard clamshell bucket; one 15-ton, diesel, mobile crane with 40-foot boom; one 5-ton mobile hoist; twenty 10-ton cargo trailers; four 6-ton, gasoline tractors; one 100-ton, diesel, switching locomotive; one rail car pusher; and one 60 cubic yard, portable, truckloading hopper. Additional equipment is provided by stevedoring companies.		Two diesel-electric, traveling, revolving, full-portail, gantry cranes; each with lift capacity of 115 tons at 65-foot radius and outboard reach of 23.5 feet, and 59 tons at 80-foot radius and outboard reach of 58.5 feet; cranes have a combined capacity of 210 tons at 45-foot radius when coupled with an equalizer. Cranes travel a distance of 1,150 feet on wharf apron, and via curved track, also travel a distance of 1,150 feet on wharf apron serving Berths 8 and 9 (Ref. No. 12). Cranes are equipped with one 6-, one 4-, and two 2-cubic yard clamshell buckets and one 80-inch electromagnet. (Continued under Remarks.)		Use of gantry cranes described under Ref. No. 11; use of mobile equipment described under Ref. No. 10. Additional equipment is provided by stevedoring companies.	
RAILWAY CONNECTIONS	Two surface tracks on apron, total length 2,200 feet; two depressed tracks in transit shed, total length 1,800 feet, join additional terminal trackage; connect with Atlantic and East Carolina Railway (Southern Railway System).		Two surface tracks on apron, total length 1,900 feet; and one 660-foot platform-level track along rear of transit shed, join additional terminal trackage; connect with Atlantic and East Carolina Railway (Southern Railway System).		Two surface tracks on apron, total length 2,400 feet; join additional terminal trackage; connect with Atlantic and East Carolina Railway (Southern Railway System).	
HIGHWAY CONNECTIONS	Via Port Terminal Road, asphalt, 20 feet wide.		Through one 12-inch line with four 2½-inch hose connections.		75 feet wide.	
WATER SUPPLY (Available to Vessels)	Through one 12-inch line with four 2½-inch hose connections.		Through one 8-inch line with 2½-inch hose connections.		Same as Ref. No. 11.	
ELECTRIC CURRENT (Available to Vessels)	None.		None.		None.	
FIRE PROTECTION (Other than City)	Hydrants, hose, hand extinguishers, sprinkler systems in transit sheds, and one 50,000-gallon water tower.					
REMARKS	Face of wharf is in line and contiguous with Ref. No. 11. Warehouses Nos. 4 thru 9 (S.W. Ref. Nos. 1, 2, 3, and 4) located in rear of transit sheds. Warehouse Nos. 4 and 5 are also used as transit sheds as required. Fumigation plant with two 9,000-cubic foot vacuum chambers located in rear of east end of transit shed, Bldg. No. 1. Trumbull Asphalt Co.: one 10-inch, steam-traced and one 6-inch pipelines extend from wharf to 11 steel, asphalt storage tanks at plant in rear, total capacity 150,000 barrels. Central Oil & Asphalt Corp.: Pipelines extend from tanks at plant of Trumbull Asphalt Co. to 6 steel, asphalt emulsion storage tanks, total capacity 240,000 gallons. Morgan Carolina Corp.: One 6-inch pipeline extends from wharf to 2 steel storage tanks at rear, total capacity 16,500 tons of liquid fertilizer.		Use of mobile cranes described under Ref. No. 10. Additional equipment is provided by stevedoring companies. Face of wharf is in line and contiguous with Ref. No. 10. Warehouse No. 10 (S.W. Ref. No. 5) is located in rear of transit shed.		Approximately 17 acres of paved, open storage area at rear.	

PIERS, WHARVES, AND DOCKS

Bogue Sound

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Corps of Engineers Port Code No. 11585

REFERENCE NUMBER ON MAP	13	Dock Code No. 385	14	Dock Code No. -	15	Dock Code No. 373
NAME	Texaco Marine Dock.		Sanitary Fish Market and Restaurant Wharf.		Davis Fish Co. Pier.	
LOCATION ON WATERFRONT	Approximately 800 feet east of foot of South 4th Street.		Between foot of South 5th and South 6th Streets.		East of foot of South 6th Street.	
OWNED BY	J. M. Davis.		Sanitary Fish Market and Restaurant, Inc.		William O. Davis and William O. Davis, Jr.	
OPERATED BY	J. M. Davis Industries, Inc.		do.		Davis Fish Co., Inc.	
PURPOSE FOR WHICH USED	Mooring and fueling recreational craft, fishing boats, and other types of small vessels.		Mooring charter fishing boats.		Receipt of seafood; icing and mooring fishing and charter boats.	
TYPE OF CONSTRUCTION	Timber pile, timber-decked extension fronting concrete bulkhead; 60- by 20-foot timber pile, timber-decked approach on upper side.		Timber pile, timber-decked wharf extending from concrete bulkhead with concrete-surfaced solid fill.		Two parallel, timber pile, timber-decked piers extending from concrete bulkhead.	
DESCRIPTION	Face	Upper side	Face		East pier	West pier
Dimensions (Feet)	165	12	100		100 by 48	100 by 10
Depth Alongside at MLW Do.	18	-	7		2-20	2-20
Usable Berthing Space Do.	165	-	250, total (See Remarks.)		248, total	200, total
Width of Apron Do.	Open.		Open.		Open.	
Height of Deck Above MLW Do.	8		8		8, each.	
Load Capacity per Sq.Ft. (Lbs.)	-		-		-	
Lighted or Unlighted	Lighted.		Lighted.		Lighted, each.	
TRANSIT SHEDS	None.		None.		None (See Remarks).	
Number and Type of Construction						
Length and Width (Feet)						
Height Inside Do.						
Floor Area for Cargo (Sq.Ft.)						
Load Capacity per Sq.Ft. (Lbs.)						
Cargo Doors						
MECHANICAL HANDLING FACILITIES	None.		None.		One $\frac{1}{2}$ -ton, electric hoist with 16-foot steel boom at face of pier; used for unloading fish from boats into a hopper which serves an electric conveyor system extending to interior of processing and packing plant building on pier. One 2-ton gasoline fork lift truck.	
RAILWAY CONNECTIONS	None.		None.		None.	
HIGHWAY CONNECTIONS	Via private road, gravel, various widths, from Arendell Street (U.S. Highway 70), asphalt, 26 feet wide.		Via Evans Street, asphalt, 35 feet wide.		Same as Ref. No. 14.	
WATER SUPPLY (Available to Vessels)	Through one 1-inch line with hose connections.		Through 1-inch line.		Through hose from a 1-inch connection inside plant on pier.	
ELECTRIC CURRENT (Available to Vessels)	A.C., 110 volts, single-phase, 60-cycle.		A.C., 110 volts, single-phase, 60-cycle.		A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle.	
FIRE PROTECTION (Other than City)	Hand extinguishers in building at rear.		None.		Water line, hydrant, hose, and hand extinguishers.	
REMARKS	Metered pumps on dock connect with two $\frac{1}{2}$ -inch pipelines extending from 10 steel, diesel fuel storage tanks at terminal in rear, total capacity 5,500 barrels.		Boats are moored stern-to at wharf; offshore timber mooring piles divide wharf into 5 berths.		One-story frame building on east pier used as a wholesale and retail fish-processing and packing plant; charter, sport-fishing boat is moored at west pier.	

PIERS, WHARVES, AND DOCKS
Bogue Sound

Corps of Engineers Port Code No. 11585

REFERENCE NUMBER ON MAP	16 Dock Code No. 373			17 Dock Code No. 802			18 Dock Code No. 810		
NAME	Davis Fish Co. Wharf.			Morehead Gulf Dock.			Ottis Fish Market Wharf.		
LOCATION ON WATERFRONT	West of foot of South 6th Street.			East of foot of South 7th Street.			Between foot of South 7th and South 8th Streets.		
OWNED BY	Southern Railway System.			Gulf Oil Co.-U.S., Division of Gulf Oil Corp.			Ottis Purifoy.		
OPERATED BY	William O. Davis and William O. Davis, Jr.			P. H. Geer, Jr.			Ottis Fish Market.		
PURPOSE FOR WHICH USED	Mooring fishing boats and other types of small vessels.			Mooring and fueling fishing boats and other types of small vessels.			Receipt of seafood; mooring and fueling company-owned commercial and sport-fishing boats.		
TYPE OF CONSTRUCTION	Timber pile, timber-decked, offshore wharf with 90- by 4-foot timber approach from concrete bulkhead.			Timber pile, timber-decked, offshore wharf with approach extending from concrete bulkhead; a 75- by 5-foot, timber pile, timber-decked pier extends midway from west side of approach, parallel to face.			Timber pile, timber-decked wharf extending from concrete bulkhead.		
DESCRIPTION	Face	East side	West side	Face	East side	West side	Face	East side	West side
Dimensions (Feet)	173	10	12	105	10+115	10+115	75	33+25	33+48
Depth Alongside at MLW Do.	15	0-15	15	12	4-12	4-12	8	-	8
Usable Berthing Space Do.	173	See Remarks.	-	105	115	See Remarks	75	-	33+48
Width of Apron Do.	Open.			Open.			33	-	Open and 4
Height of Deck Above MLW Do.	7			6			7		
Load Capacity per Sq.Ft. (Lbs.)	-			-			-		
Lighted or Unlighted	Lighted.			Lighted.			Lighted.		
TRANSIT SHEDS	None.			None.			None. (See Remarks).		
Number and Type of Construction									
Length and Width (Feet)									
Height Inside Do.									
Floor Area for Cargo (Sq.Ft.)									
Load Capacity per Sq.Ft. (Lbs.)									
Cargo Doors									
MECHANICAL HANDLING FACILITIES	None.			None.			One 36-inch wide, electric, belt-conveyor system extends from wharf to interior of seafood-processing and -packing plant building at rear.		
RAILWAY CONNECTIONS	None.			None.			None.		
HIGHWAY CONNECTIONS	Via Evans Street, asphalt, 35 feet wide.			Same as Ref. No. 16.			Via Shepard Street, asphalt, 26 feet wide, from Evans Street.		
WATER SUPPLY (Available to Vessels)	Through one 1-inch line with 3/4-inch hose connections.			Through one 1-inch line with ten 3/4-inch hose connections.			Through one 3/4-inch hose line.		
ELECTRIC CURRENT (Available to Vessels)	A.C., 110 volts, single-phase, 60-cycle.			A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle.			A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle.		
FIRE PROTECTION (Other than City)	Water line, hose, and hand extinguishers.			Water line, hose, and portable foam extinguisher.			Hose and hand extinguishers.		
PIERCINGS	One charter, sport-fishing boat berths along east side of approach and 9 berth stern-to a 170- by 5-foot timber extension fronting concrete bulkhead along waterfront at inner end of west side of approach.			Approximately 80 feet of additional berthing space is available at rear of face. Five stalls for berthing sport-fishing boats stern-to a 75- by 8-foot timber extension fronting concrete bulkhead west of west side and in rear of the 75- by 4-foot timber pier extending from west side of approach. Three metered pumps on face of wharf connect with three 2-inch pipelines extending to 3 steel storage tanks on opposite side of Evans Street, total capacity 1,043 barrels.			A 1-story, 100- by 75-foot, timber building located on wharf in rear of face, used as a seafood-processing and -packing plant. Eleven boat stalls located between west side of wharf and foot of South 8th Street; stalls used for berthing own sport-fishing vessels which are berthed stern-to a 75- by 6- to 4-foot wide timber walkway fronting bulkhead. Additional berthing available alongside a 45- by 5 foot, timber pile, timber-decked pier extending from center of 75-foot portion of walkway. A 70- by 15-foot, timber pile, timber-decked pier is located at foot of South 8th Street; used by city for testing fire truck pumps. One 1 1/2-inch pipeline extends to metered pump on wharf from one 3,000 gallon fuel tank at rear.		

PIERS, WHARVES, AND DOCKS

Bogue Sound

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Corps of Engineers Port Code No.

REFERENCE NUMBER ON MAP	19	Dock Code No.-	20	Dock Code No.-	21	Dock Code No.-		
NAME	Russell's Marine Railway Wharf.		Atlantis Marine Service Wharf.		Institute of Marine Science of University of North Carolina.			
LOCATION ON WATERFRONT	West of foot of South 9th Street.		Between foot of South 9th and South 10th Streets.		Camp Glenn, approximately 0.9 mile west of Atlantic Beach Highway Bridge.			
OWNED BY	T. H. Russell.		T. D. Eure.		State of North Carolina.			
OPERATED BY	Russell's Marine Railway.		Atlantis Marine Service, Inc.		Institute of Marine Science of University of North Carolina.			
PURPOSE FOR WHICH USED	Mooring fishing boats and other types of small vessels for repair.		Mooring fishing boats and other types of small vessels for installation and repair of marine engines.		Mooring state-owned research vessels.			
TYPE OF CONSTRUCTION	Timber pile, timber-decked wharf fronting concrete bulkhead; double row of timber mooring piles extending from east side in line with face forms a boat basin with a 50-foot, concrete bulkhead along its west side and a 36-foot, concrete bulkhead along the north side; all with concrete-surfaced solid fill. (See Remarks.)		Timber pile, timber-decked, offshore wharf with one 33- by 8-foot and one 55- by 5-foot approaches extending from a 5-foot wide, timber walkway along top of a concrete bulkhead with solid fill.		Timber pile, timber-decked offshore wharf with 147- by 8-foot timber approach; 5 timber piles in line with face.			
DESCRIPTION	Face		Face	East side	West side	Face	East side	West side
Dimensions (Feet)	100		149	43	10	30	15	23
Depth Alongside at MLW Do.	12		8	0-8	8	7	-	-
Usable Berthing Space Do.	150 w/piles		149	43	-	50 w/piles	-	-
Width of Apron Do.	Open.		Open.			Open		
Height of Deck Above MLW Do.	8		6			8		
Load Capacity per Sq.Ft. (Lbs.)	-		-			-		
Lighted or Unlighted	Lighted.		Lighted.			Lighted.		
TRANSIT SHEDS	None.		None.			None.		
Number and Type of Construction								
Length and Width (Feet)								
Height Inside Do.								
Floor Area for Cargo (Sq.Ft.)								
Load Capacity per Sq.Ft. (Lbs.)								
Cargo Doors								
MECHANICAL HANDLING FACILITIES	One 10-ton, gasoline, mobile crane with 30-foot boom.		One 2-ton, electric, overhead, traveling hoist on monorail extending from shop in rear to wharf with hinged section extending outward from face; used for handling marine engines.		None.			
RAILWAY CONNECTIONS	None.		None.		None.			
HIGHWAY CONNECTIONS	Via Sheppard Street, asphalt, 26 feet wide, from Evans Street.		Same as Ref. No. 19.		Via road, 10 feet wide, unpaved from driveway, asphalt, various widths, from Arendell Street (U.S. Highway 70), asphalt, with railroad track in center, each side 25 feet wide.			
WATER SUPPLY (Available to Vessels)	Through one 1-inch line with 3/4-inch hose connection.		Same as Ref. No. 19.		None.			
ELECTRIC CURRENT (Available to Vessels)	A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle.		A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle.		A.C., 110 volts, single-phase, 60-cycle.			
FIRE PROTECTION (Other than City)	Hand extinguishers.		None.		None.			
REMARKS	Boat basin on east side provides 100 feet of berthing with 6-foot depth of water at MLW. Concrete pile, concrete-capped pier parallel to north side of basin forms 18-foot wide slip to accommodate a 30-ton, mobile, gasoline-powered, hydraulically-operated, rubber tire, vertical boat lift with slings; and one 300-ton, vertical boat lift located on west side of wharf. Boats can be transferred from platform of lift to an open storage and working area in rear via cradles on wheels and transfer rails.		Marine engine repair plant located in rear of east portion of wharf.		-			

PIERS, WHARVES, AND DOCKS

Corps of Engineers Port Code No. -
REFERENCE NUMBER ON MAP

	22	Dock Code No. -	Dock Code No.	Dock Code No.
NAME	North Carolina Division of Commercial and Sport Fisheries Wharf.			
LOCATION ON WATERFRONT	Camp Glenn, approximately 1.0 mile west of Atlantic Beach Highway Bridge.			
OWNED BY	State of North Carolina.			
OPERATED BY	North Carolina Division of Commercial and Sport Fisheries.			
PURPOSE FOR WHICH USED	Mooring state-owned research and patrol vessels.			
TYPE OF CONSTRUCTION	Concrete pile, concrete-decked, off-shore wharf with 334- by 12-foot approach; 2 timber mooring dolphins one in line with face on west side, one in line with rear of face on east side. (See Remarks.)			
DESCRIPTION	Face	Rear of face	East and west sides	
Dimensions (Feet)	186	162	15, each	
Depth Alongside at MLW Do.	19	12-18	-	
Usable Berthing Space Do.	244 w/dolph.	195 w/dolph.	-	
Width of Apron Do.	Open.			
Height of Deck Above MLW Do.	10			
Load Capacity per Sq.Ft. (Lbs.)	100			
Lighted or Unlighted	Lighted.			
TRANSIT SHEDS	None.			
Number and Type of Construction				
Length and Width (Feet)				
Height Inside Do.				
Floor Area for Cargo (Sq.Ft.)				
Load Capacity per Sq.Ft. (Lbs.)				
Cargo Doors				
MECHANICAL HANDLING FACILITIES	None.			
RAILWAY CONNECTIONS	None.			
HIGHWAY CONNECTIONS	Via road, macadam, 19 feet wide, from Arendell Street (U.S. Highway 70), asphalt, with railroad track in center, each side 25 feet wide.			
WATER SUPPLY (Available to Vessels)	Through one 1½-inch line with hose connection.			
ELECTRIC CURRENT (Available to Vessels)	A.C., 110 volts, single-phase, 60-cycle; A.C., 220 volts, 3-phase, 60-cycle.			
FIRE PROTECTION (Other than City)	Hydrant in rear.			
REMARKS	Additional berthing with 10 foot depth of water at MLW available along the sides of a 115. by 15-foot concrete pile, concrete-decked pier extending from east side of approach, 124 feet in rear of and parallel to wharf; sides of pier are flanked by 5 foot wide, lower level, cantilevered concrete extensions. Timber fender piles along face and rear of face of wharf and along timber extensions flanking sides of concrete pier			

OIL HANDLING AND BUNKERING

Three of the waterfront facilities described in this report are equipped to receive and/or ship petroleum products and asphalt; one of the facilities provides bunkering service to vessels.

The tabulation below gives information on the facilities equipped to handle petroleum products; details are given in the table of Piers, Wharves, and Docks, beginning on page 55, under the reference numbers indicated. Tank storage at marine service stations is not included.

OIL HANDLING AND BUNKERING FACILITIES

P.W.D. REF. NO.	OPERATOR AND/OR USER	STORAGE TANKS	
		NUMBER	CAPACITY (BARRELS)
4 8(1) 10	<u>Turning Basin</u>		
	Aviation Fuel Terminals, Inc.	10	600,000
	Colonial Oil Industries, Inc.	7	240,000
	Trumbull Asphalt Co.	11(3)	150,000(2)
TOTAL		28	990,000

- (1) Bunkering vessels.
- (2) Asphalt.
- (3) Pipelines extend from tanks to 6 steel, asphalt emulsion storage tanks at Central Oil & Asphalt Corp's plant, total capacity 240,000 gallons.

WAREHOUSES

The North Carolina State Ports Authority owns and operates seven, one-story warehouses at its Morehead City Terminal. The warehouses are in rear of the transit sheds at Berths Nos. 4, 5, 6, and 7 (P.W.D. Ref. Nos. 10 and 11). The warehouses are available to the public for long-term storage and have a combined gross total of 489,700 square feet of space. A covered, rail-loading platform extends along one side of each of the warehouses, which also are served by paved terminal roadways connecting with U.S. Highway 70.

Each of the warehouses is fully described under a reference number in the table of Storage Warehouses on page 67. The reference numbers identify warehouse locations on the Port Facilities Map of this report.

OPEN STORAGE

In addition to the long- and short-term, covered, storage facilities for waterborne cargo at the North Carolina State Ports Authority Terminal (P.W.D. Ref. Nos. 8 through 12), open storage areas are available to the public for storing commodities not requiring protection from the weather. These areas total about 40 acres and are served by rail tracks and improved roadways.

HOISTING EQUIPMENT - ASHORE AND AFLOAT

General cargo at the port usually is handled to and from vessels by ships' tackle. However, shore-based hoisting facilities are available to the public for making heavy lifts up to 210 tons. These facilities, owned and operated by the North Carolina State Ports Authority, consist of two diesel-electric, traveling, revolving, full-portal, gantry cranes serving Berths Nos. 6 through 9 (P.W.D. Ref. Nos. 11 and 12). Each has a lift capacity of 115 tons at 45-foot

radius and an outboard reach of 23.5 feet, and 59 tons at 80-foot radius and an outboard reach of 58.5 feet. The cranes can travel a total distance of 2,300 feet on the wharf aprons and have a combined lift capacity of 210 tons at 45-foot radius when coupled with an equalizer. One 6-, one 4-, and two 2-cubic yard clamshell buckets; and one 80-inch diameter, electric magnet are available for attaching to the cranes as needed.

No floating cranes or derricks for making heavy lifts at shipside are based at the port.

MARINE REPAIR PLANTS

Facilities are not available at the Port of Morehead City for making major repairs or for drydocking large, deep-draft vessels; the nearest facilities are at Newport News and Norfolk, Virginia, and are described in Port Series No. 11, titled "The Ports of Hampton Roads, VA."

Three waterfront, marine repair plants are equipped to make repairs to tugs, towboats, fishing boats, barges, and other types of small vessels. Details of these repair facilities are given in the table of Marine Repair Plants on page 68; one of the plants operates haul-out facilities, which are described in the following section, "Vertical Boat Lifts."

The Port of Morehead City also has several plants without waterfront facilities which are engaged in various types of marine repair work. These companies maintain shops and portable equipment for making above-waterline repairs and for installing equipment, gear, and machinery on all types of craft at berth.

VERTICAL BOAT LIFTS

Two vertical boat lifts are owned and operated by Russell's Marine Railway and are located at the company's plant (P.W.D. Ref. No. 19) on Bogue Sound, west of the

foot of South 9th Street. One is a 30-ton, mobile, gasoline-powered, hydraulically-operated, rubber tire lift with slings for handling small vessels into and out of the water. The lift straddles a slip on the north side of the boat basin in rear of the plant's wharf, and travels to and from an open, working and storage area in rear. A 300-ton lift is located adjacent to the west side of wharf, is electrically operated, has a 70- by 24-foot platform, and handles vessels by use of cradles traveling on rails extending from the platform to an open, working and storage area in rear. A depth of 11 feet at mean low water is available over the bottom of the cradles, when submerged.

FLOATING EQUIPMENT

The Carteret Towing Co., Inc., Radio Island, performs towing, docking, and undocking services for vessels at the Port of Morehead City. This company operates 4 diesel-powered towboats: "Charlie," "A. T. Piner," "Ben F. Royal," and "Snapper," with ratings of 350-, 575-, 700-, and 1,200-horsepower, respectively.

Additional information on floating equipment can be obtained from Transportation Series No. 5, titled "Transportation Lines on the Atlantic, Gulf, and Pacific Coasts." This publication is described under "Floating Equipment" in the Wilmington section of this report.

RAIL LINES

The Atlantic and East Carolina Railway (Southern Railway System) and the Beaufort & Morehead Railroad serve the Port of Morehead City, NC. The North Carolina State Ports Authority owns and operates a switching engine, a car pusher, and trackage serving its general cargo terminal facilities (P.W.D. Ref. Nos. 6 through 12).

STORAGE WAREHOUSES

(For public merchandise only)

WAREHOUSE REF. NO. ON MAP OPERATOR AND ADDRESS	1	2	3
	North Carolina State Ports Authority P.O. Drawer B29 Morehead City, NC 28557	North Carolina State Ports Authority P.O. Drawer 829 Morehead City, NC 28557	North Carolina State Ports Authority P.O. Drawer 829 Morehead City, NC 28557
BUILDING DESIGNATION/S LOCATION	Warehouse No. 4 In rear of Transit Shed No. 1 at Berth No. 4 (P.W.D. Ref. No. 10).	Warehouse No. 5 In rear of Transit Shed No. 2 at Berth No. 5 (P.W.D. Ref. No. 10).	Warehouse Nos. 6 and 9 In rear of north side of Warehouse Nos. 4 and 5 (S.W. Ref. Nos. 1 and 2).
KIND OF STORAGE COMMODITIES USUALLY STORED	General merchandise.	General merchandise.	General merchandise.
DESCRIPTION Type of Construction	Brick; concrete floor and roof.	Brick; concrete floor and roof.	Two buildings - concrete, with concrete floors.
Number of Floors	One.	One.	One, each.
Clear Height for Storage (Feet):			
First Floor.....	19	19	19, each.
Other Floors.....	-	-	-
Load Capacity (Lbs/Sq.Ft.):			
First Floor.....	1,000	1,000	1,000, each.
Other Floors.....	-	-	-
AREAS FOR PUBLIC STORAGE:	DRY STORAGE	COLD STORAGE	DRY STORAGE
General Storage....(Sq.Ft.)	29,120, gross.		43,862, gross.
U.S. Customs Bonded.(Sq.Ft.)	-		-
Cooler Space.....(Cu.Ft.)	-		-
Freezer Space.....(Cu.Ft.)	-		-
Convertible Space... (Cu.Ft.)	-		-
RAILWAY CONNECTIONS	One platform-level track along south side, capacity 5 cars, joins additional trackage serving terminal; connects with Atlantic and East Carolina Railway (Southern Railway System).	One platform-level track along south side, capacity 6 cars, joins additional trackage serving terminal; connects with Atlantic and East Carolina Rail- way (Southern Railway System).	One platform-level track along each building, total capacity 12 cars, joins additional trackage serving terminal; connects with Atlantic and East Carolina Railway (Southern Railway System).
TRUCKLOADING STATIONS	Eight.	Six.	Six, each.
HANDLING EQUIPMENT	North Carolina State Ports Authority has 55 fork lift trucks with capacity from 2 to 7½ tons available as needed.	Use of equipment described under S.W. Ref. No. 1.	Use of equipment described under S.W. Ref. No. 1.
FIRE PROTECTION	Sprinkler system in warehouse, water tower, hand extinguishers, and watchmen.	Same as S.W. Ref. No. 1.	Same as S.W. Ref. No. 1.
REMARKS	Warehouse divided into 2 sections by firewall and connected to Transit Shed No. 1, and is used as a transit shed as required. Trucks have access to interior of warehouse.	Warehouse divided into 3 sections by firewalls and connected to Transit Shed No. 2, is used as a transit shed as required. Trucks have access to interior of warehouse.	Each warehouse divided into 5 sections by firewalls, with truck access to interior. Northern 2 bays of Warehouse No. 6, approximately 60,000 square feet occupied by grain bagging machinery, rate 800 tons per day.

WAREHOUSE REF. NO. ON MAP OPERATOR AND ADDRESS	4	5
	North Carolina State Ports Authority P.O. Drawer 648 Morehead City, NC 28557	North Carolina State Ports Authority P.O. Drawer 648 Morehead City, NC 28557
BUILDING DESIGNATION/S LOCATION	Warehouse Nos. 7 and 8. In rear of north side of Warehouse No. 5 (S.W. Ref. No. 2).	Warehouse No. 10. In rear of Transit Shed No. 3 at Berth No. 7 (P.W.D. Ref. No. 11).
KIND OF STORAGE COMMODITIES USUALLY STORED	Dry. General merchandise.	Dry. General merchandise.
DESCRIPTION Type of Construction	Two buildings - concrete, with concrete floors.	Concrete with concrete floors.
Number of Floors	One, each.	One.
Clear Height for Storage (Feet):		
First Floor.....	19, each.	19
Other Floors.....	-	-
Load Capacity (Lbs/Sq.Ft.):		
First Floor.....	1,000, each.	1,000
Other Floors.....	-	-
AREAS FOR PUBLIC STORAGE:	DRY STORAGE	DRY STORAGE
General Storage....(Sq.Ft.)	162,720, gross, total	84,906, gross
U.S. Customs Bonded.(Sq.Ft.)	-	See Remarks.
Cooler Space.....(Cu.Ft.)	-	-
Freezer Space.....(Cu.Ft.)	-	-
Convertible Space... (Cu.Ft.)	-	-
RAILWAY CONNECTIONS	One platform-level track along each building, total capacity 12 cars, joins additional trackage serving terminal; connects with Atlantic and East Caro- lina Railway (Southern Railway System).	One platform-level track along south side, capacity 10 cars, joins addi- tional trackage serving terminal; con- nects with Atlantic and East Carolina Railway (Southern Railway System).
TRUCKLOADING STATIONS	Six, each.	See Remarks.
HANDLING EQUIPMENT	Use of equipment described under S.W. Ref. No. 1.	Use of equipment described under S.W. Ref. No. 1.
FIRE PROTECTION	Sprinkler system in warehouse, water tower, hand extinguishers, and watchmen.	Same as S.W. Ref. No. 4.
REMARKS	Each warehouse is divided into 5 sections by firewalls, with truck access to interior.	Warehouse is divided into 3 sections by firewalls. All of storage area may be used for U.S. Customs Bonded merchandise. One 480-foot truckloading platform along north side.

MARINE REPAIR PLANTS

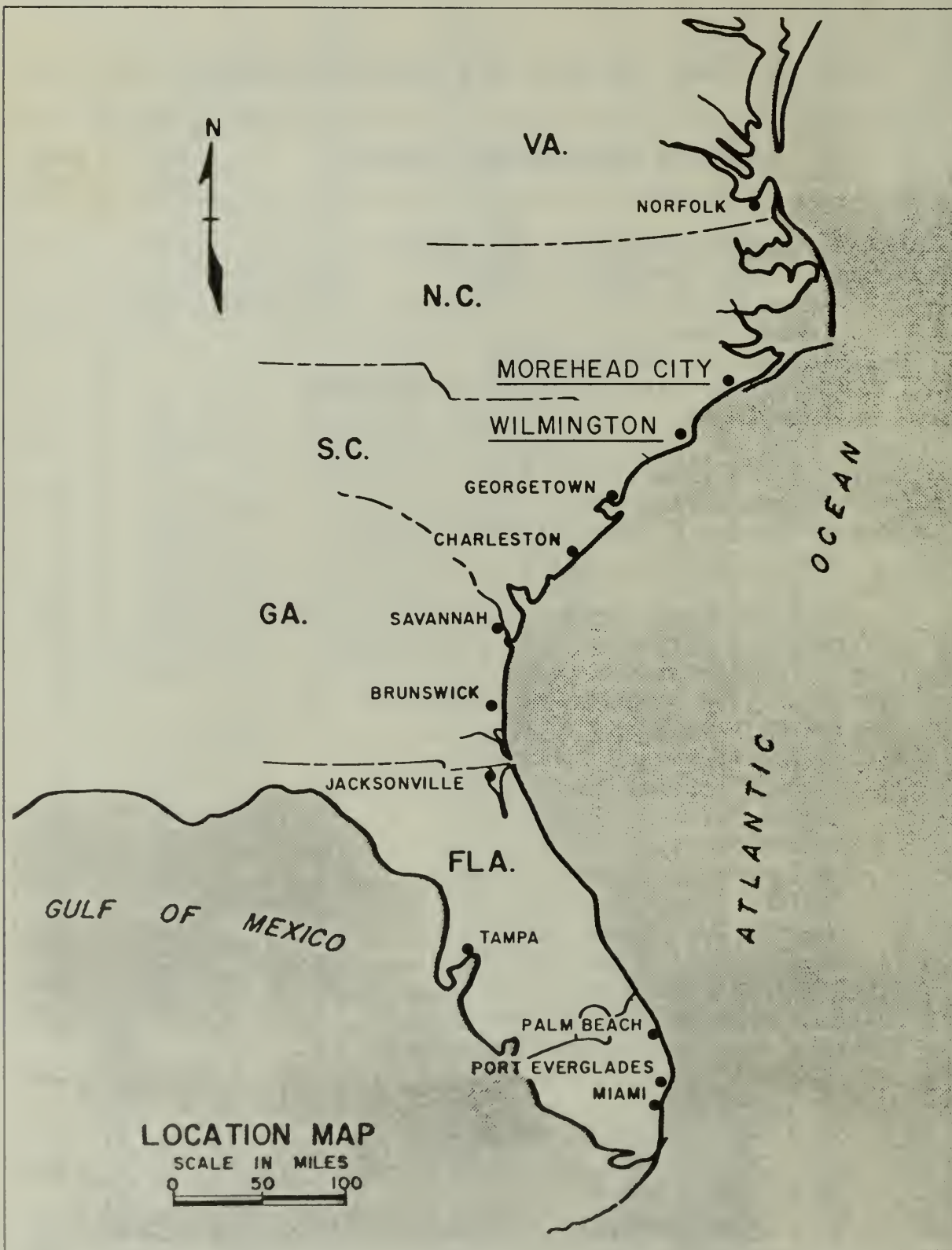
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REF. NO. OF NEAREST PIER OR WHARF	-	19	20
OPERATOR AND ADDRESS	Morehead Machine Shop 206 North 4th Street Morehead City, NC 28557	Russell's Marine Railway P.O. Box 3488 Morehead City, NC 28557	Atlantis Marine Service, Inc. 913½ Shepard St. Morehead City, NC 28557
LOCATION OF PLANT	Right bank of Calico Creek above foot of Bridges Street extended.	Bogue Sound, west of foot of South 9th Street.	Bogue Sound, between foot of South 9th and South 10th Streets.
REPAIR SHOPS AND EQUIPMENT	Machine shop; portable welding units.	Carpenter and welding shops; one 300- and one 30-ton ver- tical boat lifts; one 10-ton mobile crane; portable elec- tric hand tools; sandblasting and welding equipment.	Engine repair shop; welding equipment; and air compressors.
NATURE OF WORK UNDERTAKEN	Above-waterline repairs to small steel hull vessels; machine work; installation and repair of marine engines; shafts, propellers, and rud- ders; and welding.	Above- and below-waterline repairs to small vessels up to capacity of vertical boat lifts; repairs to marine en- gines and machinery; sandblast- ing and painting; construction of small vessels.	Installation and repairs to diesel and gasoline marine engines; welding.
LARGEST SHAFTS PRODUCED	Lathe: 40-inch swing by 20-foot bed.	None.	None.
LARGEST CASTINGS PRODUCED	None.	None.	None.
VESSEL CAPACITY AT PLANT	None.	Four small vessels.	Four small vessels.
REMARKS	Repair work done at plant and on board small vessels at any location in harbor.	Repair work done at plant and on board small vessels at any location in harbor.	-

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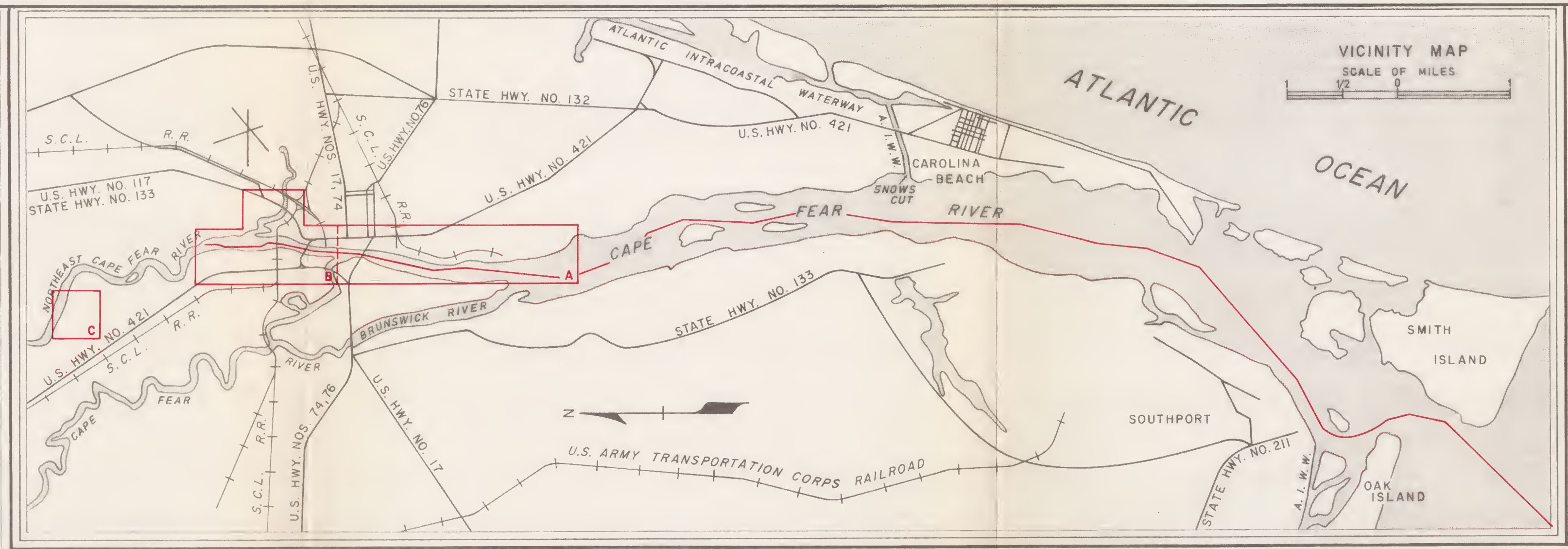
* Various operators



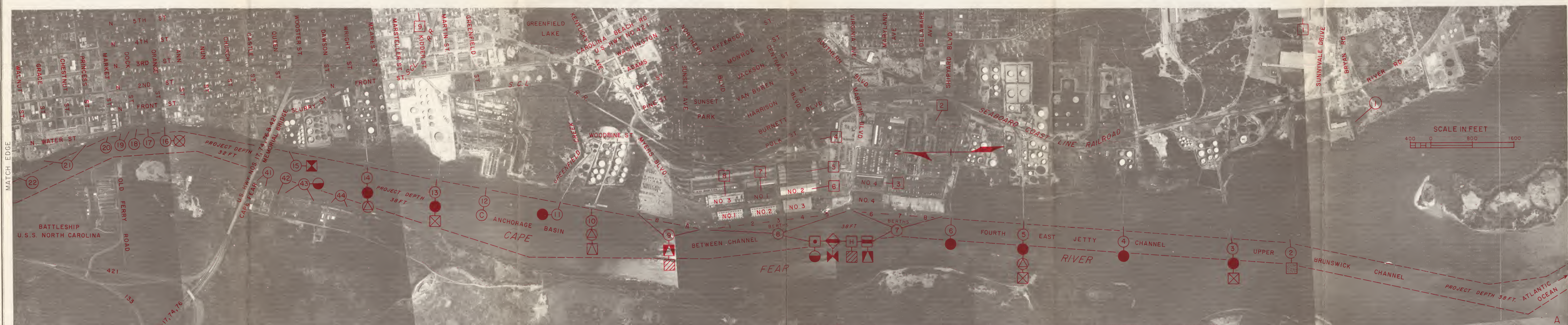


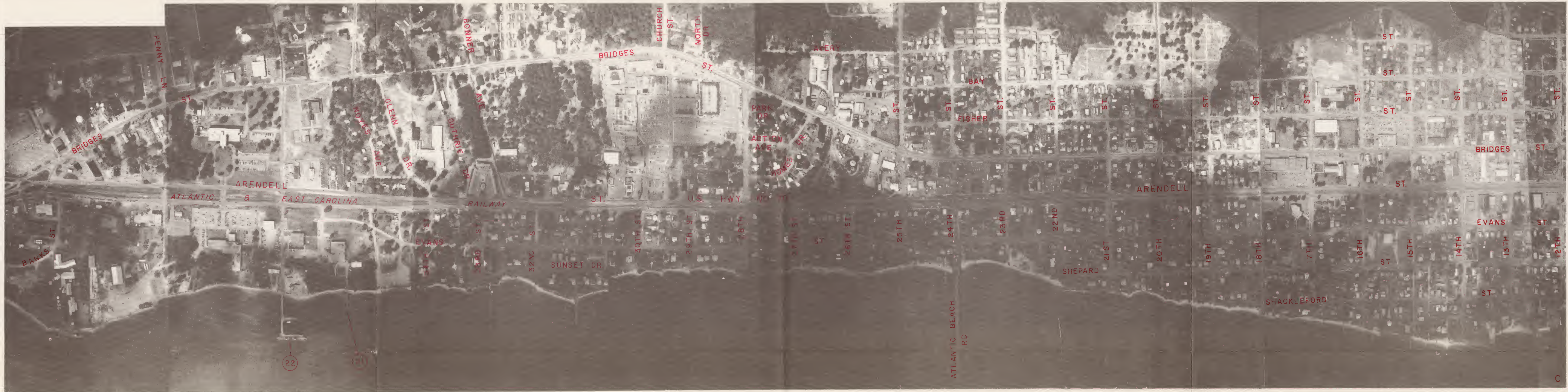
LEGEND

- | | |
|-------------------------------|-----------------------------|
| CONVENTIONAL GENERAL CARGO | STEEL PRODUCTS |
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| FERTILIZER | DRYDOCKING |
| GYPSUM, STONE | COLD STORAGE WAREHOUSE |



PORT FACILITIES AT
WILMINGTON, N.C.
WATER RESOURCES SUPPORT CENTER
U.S. ARMY CORPS OF ENGINEERS
KINGMAN BUILDING FORT BELVOIR, VA.
FIELD DATA AS OF MAY 1980
AERIALS FLOWN MARCH 1980
FIELD DATA BY THOMAS C. WHALEN
DRAFTING BY JOHN B. WOODBURN
CHIEF PORT FACILITIES BRANCH
JOHN W. VETTER





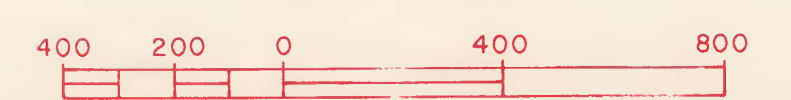
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SCALE IN FEET



- LEGEND
- CONVENTIONAL GENERAL CARGO
 - HEAVY LIFT ITEMS
 - BUNKERING
 - DRY BULK MATERIAL
 - SULPHUR
 - CHEMICALS
 - FERTILIZERS
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 - MACHINERY, HEAVY EQUIPMENT
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 - LUMBER, LOGS & WOOD CHIPS
 - FISH, SEAFOOD
 - MARINE REPAIR PLANT
 - PHOSPHATE
 - CONTAINERIZED OR ROLL ON-ROLL OFF GENERAL CARGO
 - DRY STORAGE WAREHOUSE

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